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ACKNOWLEDGEMENTS: Abraxas Films, David Allen, Avco-Embassy, Charles Band Productions, Columbia Pictures, Hemdale International Films, MCA-TV, Specialty Films, Sword & Sorcery Productions, 20th Century-Fox, Steve Wathen.

CINEFANTASTIQUE is published quarterly at P. O. Box 270, Oak Park IL 60303. Single copies when purchased from the publisher are \$4. Subscriptions: Four Issues \$10, Eight Issues \$18, Twelve Issues \$25. Foreign subscriptions are no extra charge, but please pay by International Postal Money Order in USA funds. Advertising rates available on request. For classified advertising rates see page 60. No correspondence can be answered unless accompanied by a stamped, self-addressed envelope. Second Class Postage Paid at Oak Park, Illinois. Printed in USA. Contents are copyright ©1978 by Frederick S. Clarke. *CINEFANTASTIQUE* is a Registered U.S. Trademark.

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Cover: Darth Vader on Luke's tail, a dogfight over the Death Star, painted by Ira Gilford :Cover

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LASER BLAST

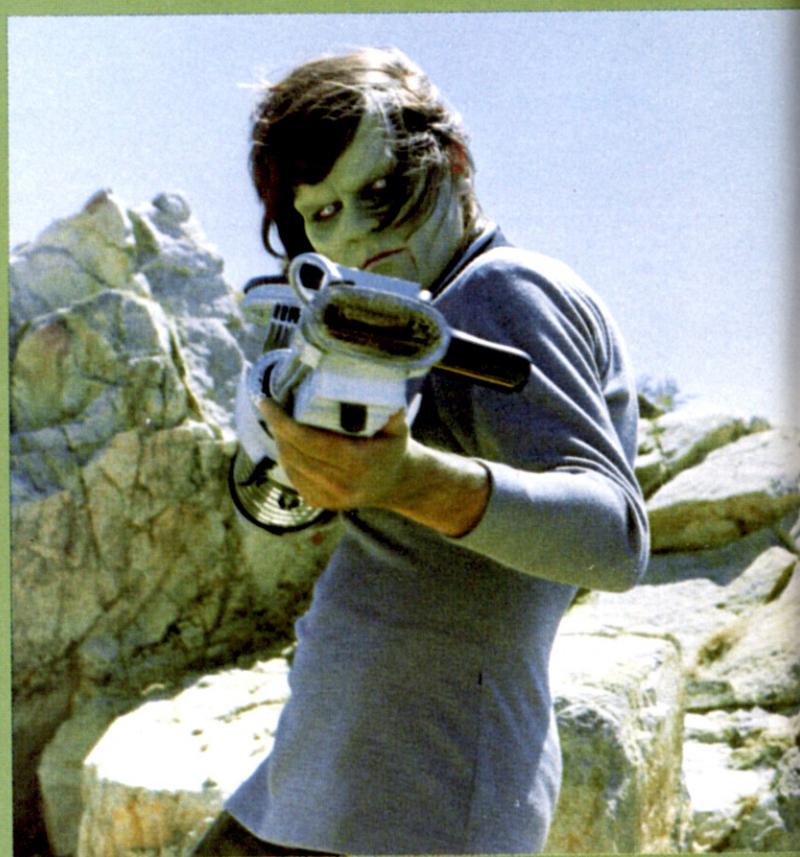
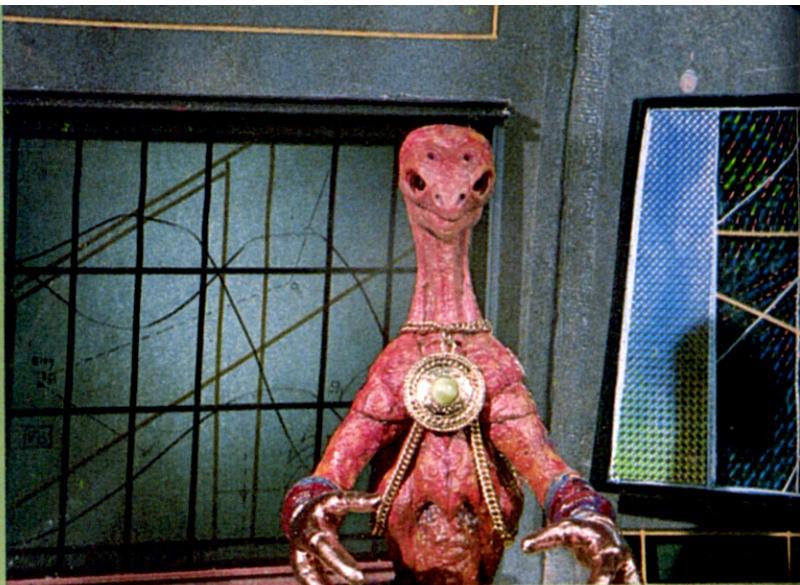
Stop-motion animator David Allen talks about his new science fiction film and the problems of doing model animation special effects on a modest budget.

What might seem at first glance as just another exploitation ripoff of *STAR WARS* is actually an interesting little science fiction film produced by the Charles Band company, featuring superior stop-motion sequences designed and directed by David Allen. The project began in earnest during late Spring 1977 and was slated for Thanksgiving release, but the producers were inspired by the eerie effectiveness of the animation and allocated additional time and money for new special effects footage. Oddly enough, David Allen's involvement with the film was a fluke that stemmed from his association with Steve Neill, who designed the alien makeup appliances and special effects props, and played an alien in the film's first reel.

Dave Allen had gotten Steve Neill several jobs in fantasy films, one on *KINGDOM OF THE SPIDERS* and another one building the full-size head of *THE CRATER LAKE MONSTER*. Neill had previously worked for Charles Band on one of his productions. While Band was preparing *LASER BLAST*, Steve Neill found himself extremely interested in Dave Allen's *PRIMEVALS* project. Both Allen and animator Randy Cook had just finished an early draft of the script, and a note of optimism was raised when Neill remarked that he knew someone who might be interested in the property. A short time later, Neill mentioned *PRIMEVALS* to Charles Band and another producer. "I had several copies of the script printed," recalled Allen, "and Charlie was given one. He read it, but it took him weeks to read it—so long, in fact, that I felt he was not that interested in it. However, Steve Neill was very enthusiastic about *PRIMEVALS* and asked me to send, via him, my sample reel of animation. Charlie looked at it, and although he thought it was interesting, he spoke in a somewhat distant way about the project. He did say, however, that he had a project of his own called *LASER BLAST*, and on the basis of the footage he had seen, he wanted me to create animated models of the aliens instead of having actors in makeup as originally planned. Steve was to do those makeups, so it might sound like he screwed himself out of a job, but Steve was very enthusiastic about the potential of animation. And I told Charlie that for the amount of time and money he was giving to the assignment, there was no way I could do *all* of it in stop-motion. I would have to have at least one of the aliens as an actor in makeup, while the two animated puppets would be chasing him as outlined in the story. So Steve wound up playing the part in his own makeup. I was able to play a lot of the shots to him so that I could cut away from the animation whenever I needed to."

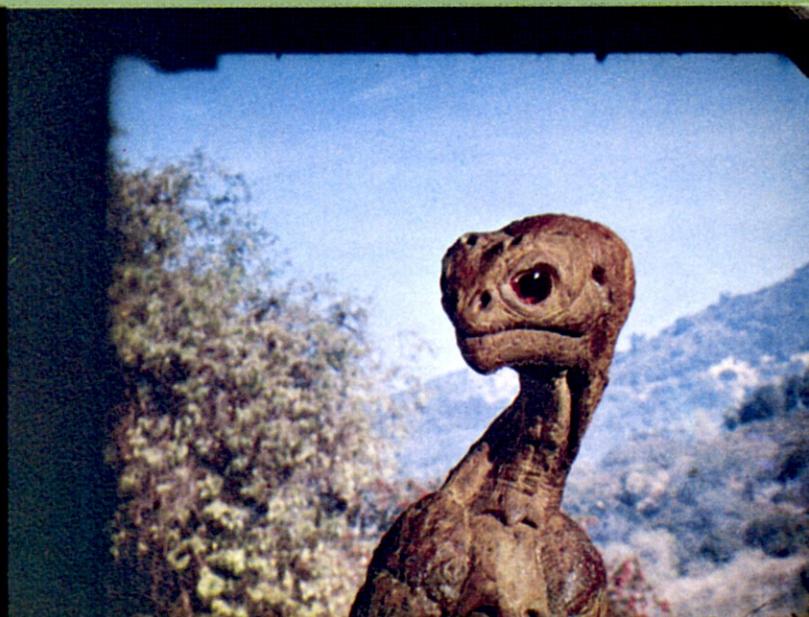
Dave Allen was given a schedule of about eight weeks in which to complete all of the animated scenes. Assisted by the husband-and-wife team of Steve and Ve Neill and camera assistant Pault Gentry, Allen went out to the Mojave Desert and photographed all of the background plates in one afternoon. Back at Allen's Burbank studio, process projection setups were designed while Jon Berg began sculpting the prototypes for the lizard men and built armatures for them. Randy Cook, who co-animated *THE CRATER LAKE MONSTER* with Phil Tippett, was hired as the principal animator for *LASER BLAST*. Modelmaker Greg Jein designed and built the spacecraft seen

by Paul Mandell





Top Left: The alien commander as seen in a communication on a videoscreen inside the alien ship. *Top Middle and Right:* Inside their ship the aliens listen to the new instructions from their leader. The stop-motion aliens were designed and constructed by Jon Berg. The spaceship interior was designed by Dave Carson. *Middle Left:* Makeup artist Steve Neill in an alien makeup of his own design as a fugitive from outer space at the film's opening who is exterminated by the two stop-motion aliens who fail to retrieve his powerful laser weapon. Neill also built the film's prop laser gun. *Middle Right:* The stop-motion aliens use their own laser weapon. David Allen accomplished the composite of the laser ray in the camera during animation by reflecting it in with a two-way mirror. This obviated the need for expensive optical work later on. *Bottom Left:* The stop-motion aliens, referred to as "Mr. Brown" and "Mr. Green" during animation, are bolted to an acrylic animation stage in front of a rear-screen projection. *Bottom Middle and Right:* Two additional rear-screen set-ups. The animation models are only 13" high, and evidence a sympathetic, even humorous, character which aids the film's development.



in the film, and Dave Carson designed the interior of the ship. "I'm basically producing and directing these sequences," said Allen, who also had to hold down his full-time position as Stop-Motion Director at CPC in Hollywood while working on the film. "I'm animating some of it, but unfortunately I'm not doing as much as I wish I could be doing. I designed all the shots and supervised without trying to be a little Napoleon."

The film is no heavy exercise in science fiction, nor does it pretend to be, but it does have some entertaining aspects in both story and special effects. The very idea of lizard men lends itself particularly well to stop-motion artistry and that will obviously be a strong selling point. LASER BLAST opens with an alien (Steve Neill) running desperately across a desert locale in an attempt to escape the clutches of two animated "lizard men." The alien is a rebel villain while the lizard men are law-abiding extraterrestrial vigilantes. The chase ends when the alien is blasted by the two creatures. All that remains are his blast-gun and pendant. Before the objects can be retrieved, a private plane flies by frightening them off. Trouble begins when the town scapegoat (Kim Milford) discovers the gun and pendant and decides to even up the score with his persecutors. In no time at all, the town and its people are being blasted to Kingdom Come while the evil-doer gradually becomes possessed by the spirit of the dead alien. Eventually he becomes the creature physically as well as mentally. No logical explanation as to why this demonic transformation takes place is made, but the makeup by Steve Neill is an excellent one, complete with out-of-this-world contact lenses and snake-like fangs. The climax is generated when the lizard men return to Earth in their spacecraft in an attempt to end the mad rampage and undo their carelessness in leaving behind the laser gun.

Just as the villain is on the verge of killing his girlfriend, he is gunned down by the two vigilantes and returns to his former appearance. Zap! Space-age exorcism! The aliens return to their planet, order restored.

LASER BLAST was originally projected for a November release, but new ideas began to generate. An answer print was made containing uncleared music from Bernard Herrmann scores, and due to the good reception that the stop-motion sequences received, more footage was requested by distributor Irwin Yablans and several other prospective distributors whom Charles Band met in Italy when he previewed footage to acquire overseas distribution.

The new stop-motion additions carry the characters in the first part of the film and develop the buildup to a climax in a more exciting way. "We've created some new scenes in space inside a rocketship, having the aliens watch some scenes back on Earth, and being ordered by their commander to go back and resolve the mess that resulted from leaving behind a laser gun. This necessitated the building of the miniature interior. One new scene shows the aliens finding a car that gets burned up. They begin to look for the finder of the laser gun at the scene of a wreck, which brings us back into the shot already filmed where they gun him down. It's a bit more interesting now—you see them tracking the bad guy instead of having them suddenly appear at the end. It's still a small amount of additional animation."

The stop-motion puppets are a treat. There was a desire expressed at the outset to use the lizard man models Dave had built ten years ago for test footage on his RAIDERS OF THE STONE RINGS, but since new duplications of those figures will be used in PRIMEVALS, Dave was adamant on having different ones made for LASER BLAST. Jon Berg did some prototypes in wax, Dave Allen made suggestions,

and Jon did the sculptures. The armatures came last. "I had to make the mold and cast three figures and paint them," said Allen. "I think Jon did a really nice job with the puppets. Had I done them myself, however, it would've been quite different."

The result was a sympathetic sort of creature with an almost cute, turtle-like head and a gnarled, tree-like body. "I don't know if Jon intended them to look sympathetic," added Allen, "but it worked out to the advantage of the script because they turn out to be the good guys of the story, if you can call them that. They even get a few laughs in the picture. They're not scary monsters tearing up the countryside. I think their features really helped to reinforce that impression."

The two alien vigilantes were affectionately referred to during animation as Mr. Brown and Mr. Green, and the third alien (the commander of the two) appears on a telescreen inside the spaceship in the new footage. Only thirteen inches high, they appear to be seven feet tall and were animated in four basic sequences. Medium two-shots of the puppets from the waist up were photographed from four different angles and animated by Dave Allen. Certain tricks were done in the camera during animation. A ray from the puppet's laser gun, for example, was reflected in via a two-way mirror without resorting to opticals or superimpositions.

Interestingly, the stage on which the models were bolted down was made of a special acrylic plastic, and with good reason. "Using that material, you can see the bottoms of the feet from below and decide where to drill for your holes. It might seem there would be a problem with light reflections bouncing back up to the creatures, but in actual fact that rarely seems to happen. I have other stages that are pre-drilled, but I couldn't use them because the holes were too large for the creatures' tiny feet."

Stop-motion had applications not only for the aliens but for Greg Jein's rocketship as well. While several shots used a cutout of the ship itself, many were done with the miniature braced on music wire in front of a process image. The trick is to photograph a slight pendulum movement to avoid strobe problems. It isn't easy. "You want the model to swing during exposure. You don't get a true blur—you get an exposure on each end of the swing and a sort of blur in between. It's better than an absolutely sharp frame. It depends on the scale of the model of course, but you shouldn't try to move it more than 3/8 inch per frame."

This technique might seem to smack of EARTH VS. THE FLYING SAUCERS, but it is rather obvious that Ray Harryhausen did not animate his saucer miniatures that way throughout the picture. "Ray no doubt used wires in some shots of his saucers," observed Allen, "but for the most part the models probably had a rod brace that went back to a sheet of acrylic or glass, with the models matting out their own supports in front of the process image. Ray animated the spin with a much more positive system of control."

Not only is the animation of aerial braced miniatures a difficult chore, it is often undesirable, especially with something like a rocket where the strobing problem can become almost unbearable. It happened in LASER BLAST despite the pendulum motion during animation. Unfortunately, it

David Allen, holding an armature for a stop-motion animation model.





Kim Milford plays the town scapegoat who finds a powerful alien laser weapon in the desert (left) and in using it to even up the score with his persecutors, gradually transforms into an alien himself (right). Alien makeup by Steve Neill.

was in a principal shot of the ship zooming over the crest of a hill. After judging it as unsatisfactory, Dave decided to go for broke and do it live action on the roof of the Allen studio. "It's just like a Lydecker shot and the only one in the film like that. We rigged it up on a boom arm and just swung it across the camera in an arc. It's a little risky; if the model falls, you're in trouble. We put some padding underneath it and didn't break any wires, so it worked out rather lovely. I'm really delighted because what was almost the worst shot of the whole show is now one of the better shots in the sequence. The ship comes over the camera lens, goes off into the distance and banks. It's almost the only believable shot of the ship flying, because all the other shots are done in single frame and it tends to look a bit stuttery."

On the non-technical end, LASER BLAST is a mixed bag of relatively unknown newcomers and several seasoned actors, a trademark of recent Charles Band productions. With Kim Milford heading the fledgling cast as the discoverer of the abandoned alien laser gun, others include Cheryl Smith as his girlfriend, Ron Maydock as the local sheriff, and Dennis Burkley as the deputy sheriff. Brief appearances among the more established names include Roddy McDowall as a physician, and Keenan Wynn as a crazed old colonel. Michael Raye makes his directing debut, and the screenplay is by Raye and Frank Perelli. However novel in its approach to science fiction, the film admittedly has its weaknesses. "One problem," admitted Allen, "is that the animation doesn't really work well

with the rest of the picture. The film seems to follow a non-structured, ambient, Cassavetes approach. Then you suddenly cut to these animated sequences which really are out of a different genre. It's almost like cutting to puppet theatre."

As this preview is being written, the new special effects for LASER BLAST are still in progress and the film will probably be released sometime in the Spring of 1978. Paul Gentry is busy filming scenes of the ship in deep space and Randy Cook is doing most of the animating.

A few technical mishaps caused problems along the way. When the animation set was bumped during filming, it necessitated shooting a closeup of an alien as a "save" shot, to be inserted where the jarred set would have been distracting. "Randy Cook is a very talented animator," said Allen, "but he's still learning. Certain mistakes were happening which had to be absorbed within the job. There simply is no time to do things over again. I'm only sorry I had to serve more as a director or producer than as actual animator. On the first set of effects I did about half of the stop-motion. I did very few of the new scenes—a few fast closeups, a headshot here, a turn there—things that I've been able to do during the evening hours. The longer, ten to twenty-foot scenes required somebody working here during the day and half the night, if necessary. That's something I just can't do myself because of my full-time position at CPC."

Working under such circumstances, Allen often finds himself unfairly skewered by critics of his work. He's making no secret of his minimal involvement with the animation in LASER BLAST, but he still expects to get blasted for any technical blemishes which might surface in the film. "It's distressing in a way," muses Allen. "Someone already sent me a review from

the *San Francisco Chronicle* berating me for THE CRATER LAKE MONSTER, about how I didn't have Ray Harryhausen's 'sympathetic finesse' in handling the monsters and all that crap. What they don't realize is that only part of the animation is mine and that I only have seven or eight weeks to pull it all together because the producers need it so quickly. Then when the film comes out you find that your work is being compared to people who have sixteen months and a few million dollars at their disposal. LASER BLAST will undoubtedly have them hurling epithets at me and calling me the Bert Gordon of the stop-motion world, or something on that order."

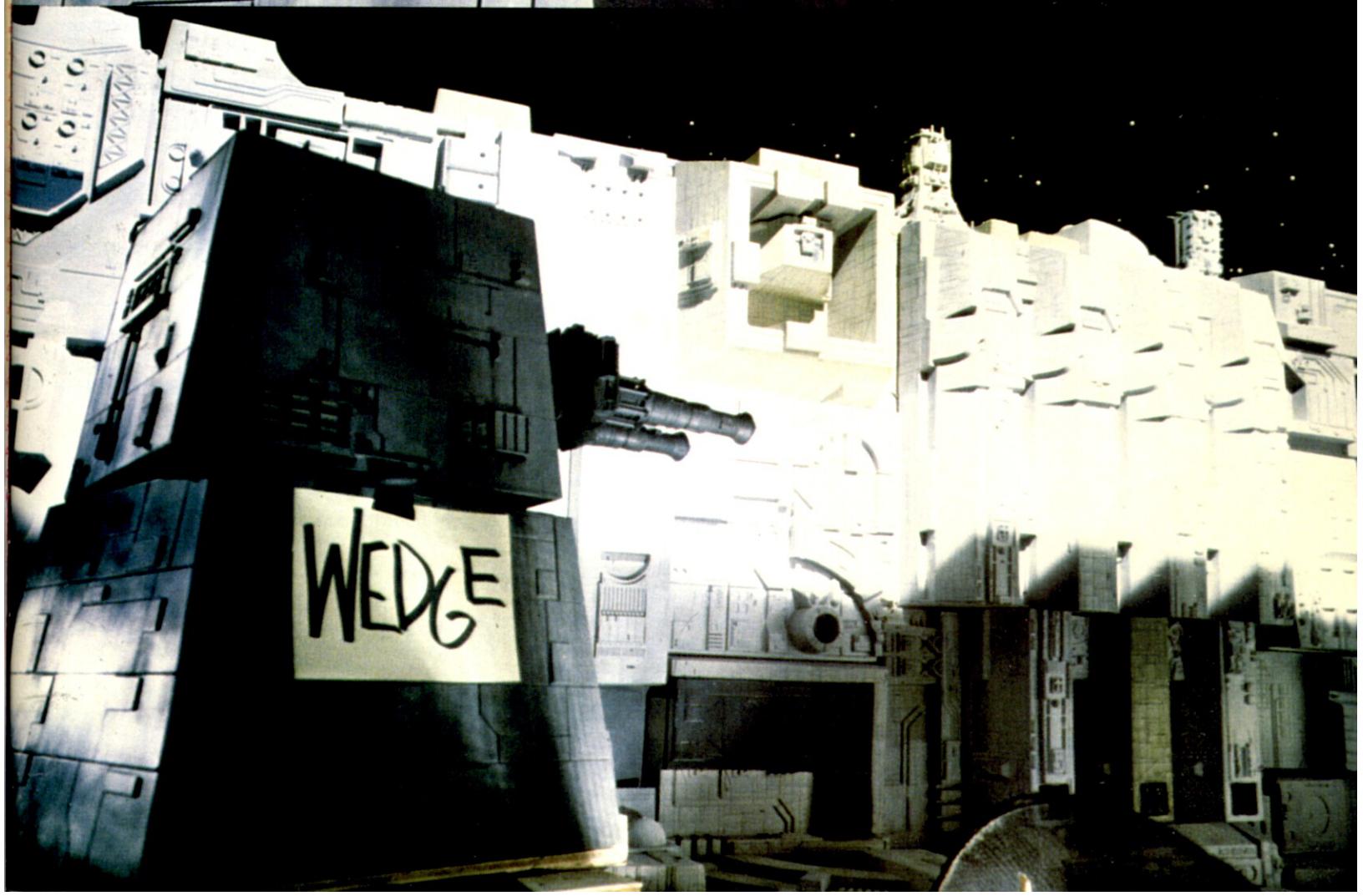
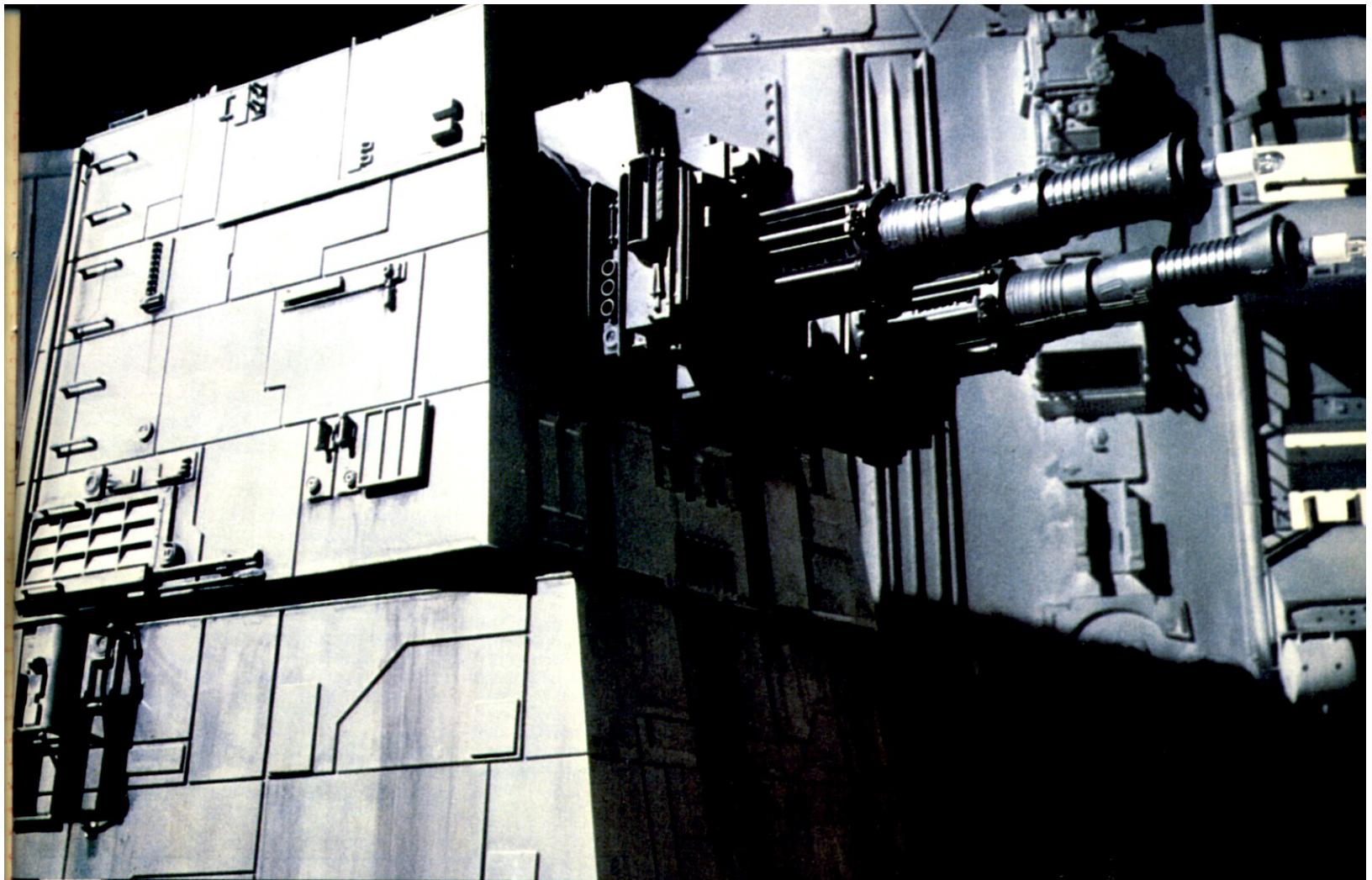
While that just might happen with LASER BLAST, the armchair animators will have a hard time finding bones to pick with as promising a project as Allen's PRIMEVALS, provided that it is done as he envisions. After ten years of trying to get his "dream" stop-motion film off the ground, as a result of his work on LASER BLAST, Allen has found a producer in Charles Band who is willing to do the project right. PRIMEVALS is a fascinating excursion into a fantasy world that to date remains untapped by filmmakers. The concept is good, the talent is established, and now the money is there. Supported by that kind of tripod, the outlook is very optimistic. Production on PRIMEVALS is slated to begin February 1, and the entire saga of how it evolved will be explored in depth in a future issue. Between it and the concurrent production of Jim Danforth's TIME-GATE, it looks like some new blood will finally be pumped into an anemic genre. With all due respect to the technical expertise of Ray Harryhausen, perhaps we can look forward to something far more imaginative and daring than another embarrassingly banal Sinbad offering.

Making STAR WARS

Twenty-three interviews with the actors, technicians and filmmakers who brought the magic of space opera to the screen as never before.

Top Right: A laser canon in the Death Star Trench, an excellent example of the detailed work done in the model shop at Industrial Light & Magic. The design is similar to WWII battleship artillery. Tiny light bulbs in the cannon barrels serve as point light sources for the animated laser blasts. *Bottom Right:* A test shot of the laser cannon miniature photographed by Dennis Muren and Doug Beswick. "Wedge" refers to a series of exposure tests—one frame is shot at f2.8, f3, f4, and so on. The next day this strip is checked to see which exposure is best. The laser cannon miniature was fully motorized and operated by computer to control swivel, barrel recoil and tilt, and sequencing of the light bulbs to signal the laser fire. *Top Left:* On location near the Mojave Desert, filming the motorized miniature of the Sand Crawler. The miniature is operated by remote control from lower left. Chief model maker Grant McCune (holding prod) and Bill Shourt attempt to effect a slight directional change without getting some colossal-sized footprints in camera range. *Below Left:* Director George Lucas face-to-face with C3P0, his version of the fabulous robot from Fritz Lang's METROPOLIS. *Below Right:* Filming Luke (Mark Hamill) and C3P0, in Tunisia, as they scout for Tuskin Raiders.





MAKING STAR WARS

INTERVIEWS BY PAUL MANDELL

STAR WARS CREDITS

Writer and director, George Lucas. Producer, Gary Kurtz. Production designer, John Barry. Director of photography, Gilbert Taylor, B.S.C. Music, John Williams; performed by The London Symphony Orchestra. Special photographic effects supervisor, John Dykstra. Special production and mechanical effects supervisor, John Stears. Film editors, Paul Hirsch, Marcia Lucas, Richard Chew. Production supervisor, Robert Watts. Production illustration, Ralph McQuarrie. Costume designer, John Mollo. Art directors, Norman Reynolds, Leslie Dilley. Makeup supervisor, Stuart Freeborn. Production sound mixer, Derek Ball. Casting, Irene Lamb, Diane Crittenden, Vic Ramos. Supervising sound editor, Sam Shaw. Special dialogue and sound effects, Ben Burtt. Sound editors, Robert R. Rutledge, Gordon Davidson, Gene Corso. Supervising music editor, Kenneth Wannberg. Rerecording mixers, Don MacDougal, Bob Minkler, Ray West, Mike Minkler, Lester Fresholtz, Richard Portman. Dolby sound consultant, Stephen Katz. Orchestrations, Herbert W. Spencer. Music scoring mixer, Eric Tomlinson. Assistant film editors, Todd Boekelheide, Jay Miracle, Colin Kitchens, Bonnie Kochler. Camera operators, Ronnie Taylor, Geoff Glover. Set decorator, Roger Christian. Production manager, Bruce Sharman. Assistant directors, Tony Wayne, Gerry Gavigan, Terry Madden. Location manager, Arnold Ross. Assistant to producer, Bunny Alsup. Assistant to director, Lucy Autrey Wilson. Production assistants, Pat Carr, Miki Herman, Gaffer, Ron Tabera. Property master, Frank Bruton. Wardrobe supervisor, Ron Beck. Stunt coordinator, Peter Diamond. Continuity, Ann Skinner. Titles, Dan Perri. 2nd unit photography, Carroll Ballard, Rick Clemente, Robert Dalva, Tak Fujimoto. 2nd unit art direction, Leon Erickson, Al Locatelli. 2nd unit makeup, Rick Baker, Douglas Beswick. Production controller, Brian Gibbs. Location auditor, Ralph M. Leo. Assistant auditors, Steve Cullip, Penny McCarthy, Kim Falkenburg. Advertising and publicity supervisor, Charles Lippincott. Unit publicist, Brian Doyle. Still photographer, John Jay. Miniature and optical effects unit: 1st cameraman, Richard Edlund. 2nd cameraman, Dennis Muren. Assistant cameramen, Douglas Smith, Kenneth Ralston, David Robman. 2nd unit photography, Bruce Logan. Composite optical photography, Robert Blalack (Praxis). Optical photography coordinator, Paul Roth. Optical printer operators, David Berry, David McCue, Richard Pecorella, Eldon Rickman, James Van Trees, Jr. Optical camera assistants, Caleb Aschkenazy, John C. Moulds, Bruce Nicholson, Gary Smith, Bert Terrieri, Donna Tracy, Jim Wells, Vicki Witt. Production supervisor, George E. Mather. Matte artist, P. S. Ellenshaw. Planet and satellite artist, Ralph McQuarrie. Effects illustration and design, Joseph Johnston. Additional spacecraft design, Colin Cantwell. Chief model maker, Grant McCune. Model builders, David Beasley, Jon Erland, Lorne Peterson, Steve Gawley, Paul Huston, David Jones. Animation and rotoscope design, Adam Beckett. Animators, Michael Ross, Peter Kurian, Jonathan Seay, Chris Cassidy, Lyn Gerry, Diana Wilson. Stop motion animation, Jon Berg, Philip Tippett. Miniature explosions, Joe Viskocil, Greg Auer. Computer animation and graphic displays, Dan O'Bannon, Larry Cuba, John Wash, Jay Teitell, Image West. Film control coordinator, Mary M. Lind. Film librarians, Cindy Isman, Connie McCrum, Pamela Malouf. Electronics design, Alva J. Miller. Special components, James Shourt. Assistants, Masaaki Norihoro, Eleanor Porter. Camera and mechanical design, Don Trumbull, Richard Alexander, William Shourt. Special mechanical equipment, Jerry Greenwood, Douglas Barnett, Stuart Ziff, David Scott. Production managers, Bob Shepherd, Loti Tinney. Production staff, Patricia Rose Dugan, Mark Kline, Rhonda Peck, Ron Nathan. Assistant editor, Bruce Michael Green. Additional optical effects: Modern Film Effects, Ray Mercer & Company, Van Der Veer Photo Effects, Master Film Effects, De Patie-Freleng Enterprises Inc. Production statistics: Filmed in Panavision and Technicolor. Prints by DeLuxe and Dolby System Sound. Photographed in Tunisia, Tikal National Park, Guatemala, Death Valley National Monument, and EMI Elstree Studios, England. Post-production completed at American Zoetrope, San Francisco, a Lucasfilm Ltd. Production, 121 minutes.

STAR WARS CAST

*Luke Skywalker Mark Hamill
Han Solo Harrison Ford
Princess Leia Organa Carrie Fisher
Grand Moff Tarkin Peter Cushing
Ben (Obi-Wan) Kenobi Alec Guinness
See Threepio (C3PO) Anthony Daniels
Artoo-Detoo (R2-D2) Kenny Baker
Chewbacca Peter Mayhew
Lord Darth Vader David Prowse
Uncle Owen Lars Phil Brown
Aunt Beru Lars Shelagh Fraser
Chief Jawa Jack Purvis
Rebel General Dodonna Alex McCrindle
Rebel General Willard Eddie Byrne
Red Leader Drewe Henley
Red Two (Wedge) Dennis Lawson
Red Three (Biggs) Garrick Hagon
Red Four (John "D") Jack Klaff
Red Six (Porkins) William Hootkins
Gold Leader Angus McInnis
Gold Two Jeremy Sinden
Gold Five Graham Ashley
Imperial General Taggi Don Henderson
Imperial General Motti Richard Le Parmentier
Commander No. 1 Leslie Schofield*

Additional Interviews

Mick Garris Mike Childs Alan Jones Carl Macek

I would like to extend a special note of thanks to two individuals: Dennis Muren, who was with me in July when "Making STAR WARS" was in its earliest stages, and David Allen, who generously opened up his little black book and supplied the names and numbers of people to contact. My only regret is that George Lucas declined to be interviewed. We can perceive Lucas and his contribution to the film only through the comments and observations of others. *Paul Mandell*

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JOHN DYKSTRA

Special Photographic Effects Supervisor

Perhaps the best way to describe the John Dykstra Story would be to retitle it as *Man and His Machine*. The motion picture hardware that John and his associates developed for *STAR WARS* served as an instrument for providing new heights of screen magic and lent a new dimension to the photography of miniatures in motion. The Dykstraflex system put special effects on the kind of precision manufacturing level that probably would have been labeled "science fiction" by Hollywood ten years ago. Spaceships need not glide by arthritically any longer: now they can be choreographed by the effects cameraman. Space opera has become space ballet.

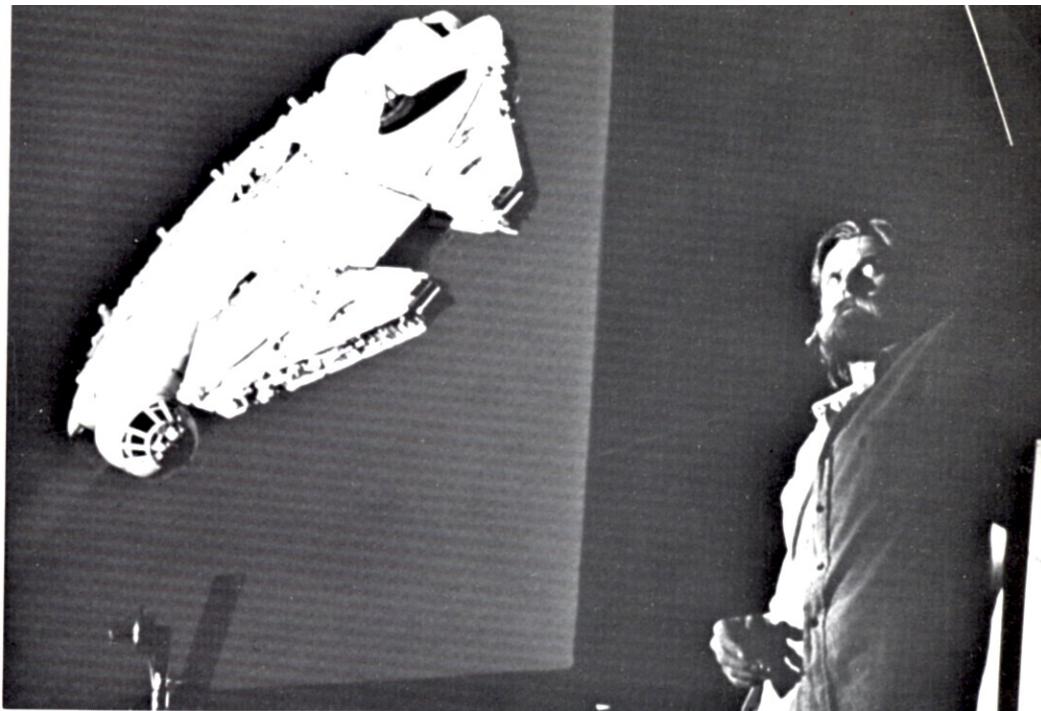
John Dykstra was born in Long Beach in 1947. He attended California State College at Long Beach and almost completed the requirements for a degree in Industrial Design. "I'm in the process now of perhaps graduating." As a result of his association with Doug Trumbull, he cut his teeth on films like *SILENT RUNNING* and *THE ANDROMEDA STRAIN* as a special effects cameraman and designer. Both have worked on a variety of projects together at Future General. In addition to commercials, John worked on *VOYAGE TO THE OUTER PLANETS* released in "Imax", and did a presentation film at Future General for a proposed feature *JOURNEY OF THE OCEANAUTS*.

John Dykstra is a genius. I say that not as a self-serving, adulatory remark, but only as a measure of his technical achievements and the clarity of his thought processes. It took a dynamic individual like John to formulate just how the effects for *STAR WARS* were going to be handled and to turn an empty warehouse in Van Nuys into an incredibly versatile system, appropriately christened Industrial Light and Magic.

*How did you land your position as the effects supervisor on *STAR WARS*?*

Gary Kurtz called me at Future General one day in June 1975. He asked me if I wanted to come in and talk about *STAR WARS*. A couple of weeks later they asked me if I wanted to go ahead and do it. And that was it. I was an unknown individual at the time. After selecting the personnel that I felt were necessary to carry out the special requirements of this project, we set up the ILM facility in Van Nuys.

INTERVIEW BY PAUL MANDELL



What would you consider was your most difficult problem?

The most difficult problem was translating the material that was going to appear in the film, from the written script into a visual dynamic. This included the continuity that had to be controlled with regard to where the lasers appeared, what ship cut with what ship, the pacing of the scene, etc.

One of the most difficult shots was the opening one where the Star Destroyer flew in overhead. That big spaceship was three feet long. The one it was chasing, the Rebel Blockade Runner, the one which is drawn into the Star Destroyer, was six feet long. The space it was being drawn into, the docking bay of the Star Destroyer, was six inches. The Star Destroyer model that was used to accept the Blockade Runner after it had been disabled is the same one that flew in overhead. So in that one composite where the Rebel ship is drawn into the bay, that ship is six feet long and the bay it's being drawn into is six inches.

Did you use a wide angle lens on the opening shot?

No. We used a 24mm lens on that one. In the horizontal 8-perf VistaVision format, when you take the height of the frame and double it and turn it sideways, you increase the format. What you end up with is almost twice the field of view with the same focal length lens. So we didn't have to use the very wide lenses because of the large format. All the lenses used were Nikon lenses.

Did you develop the motion control camera, dubbed the "Dykstraflex?"

I had the idea for years. This is just one permutation of the concept. It's not a new concept. It's very old, like blue screen or front projection. It's been around for years, just waiting to be perfected or improved to suit the needs of a particular situation. Al Miller is an electronics designer. We sat down with two bottles of wine during the old Future General days and figured out what the machine ought to do, what it ought to look like, and how to program it. Basically, it is just a combination of all the techniques that have been used for years, combined into a sophisticated device capable of manufacturing techniques.

Special photographic effects supervisor John Dykstra checks out the lighting for a blue screen set-up of Han Solo's pirate ship, the Millennium Falcon. The ship miniature appears to be suspended in mid-air, but is actually attached to a blue pylon at lower left, which blends almost perfectly with the blue screen.

What was your rapport with George Lucas like?

Communication was a real hassle between myself and the director. Obviously, the director didn't want to give up that portion of the show. He wanted to control it and it was very difficult for him to have control over it while he was in England. While George was away, we were developing a lot of the material that ended up in the show. It was very hard for him to communicate to us what he wanted to see without being there. That was as frustrating for George as it was for us because obviously we could have been more efficient if we had closer communication during that time.

How long did that situation last?

I guess they were in England for two or three months, so there was a fairly long period of time when we were producing without being able to get direct feedback from him. That's probably when some of the most confusing aspects of *STAR WARS* came up as far as what we were going to do and how we were going to do it. At that point, I had to make the decisions but I was always in the position of having to change that decision if it didn't meet with his approval.

George is fine to work with. He's really a talented guy. He doesn't know much about the technical aspects of special effects, but he knows a lot about making pictures. As far as directors go, he is as easy to work for as any, perhaps easier in the sense that he did let us have a fair amount of control over what went on here.

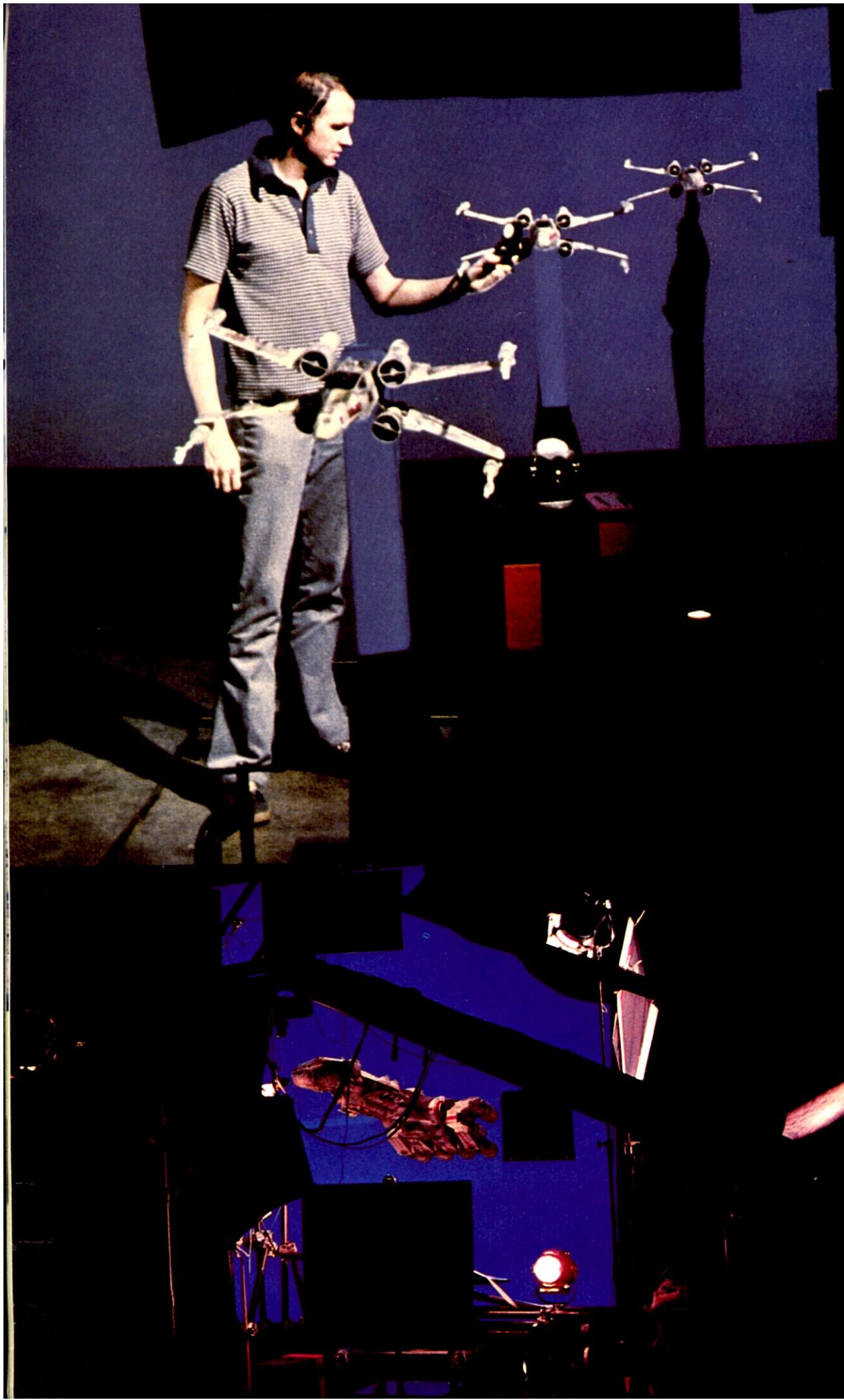
Did you have apprehensions about using the blue screen system on such an extravagant level?

I had apprehensions about everything. I had apprehensions about hanging that camera out on the end of the boom. I didn't know whether that would work or not. I didn't know whether we could maintain

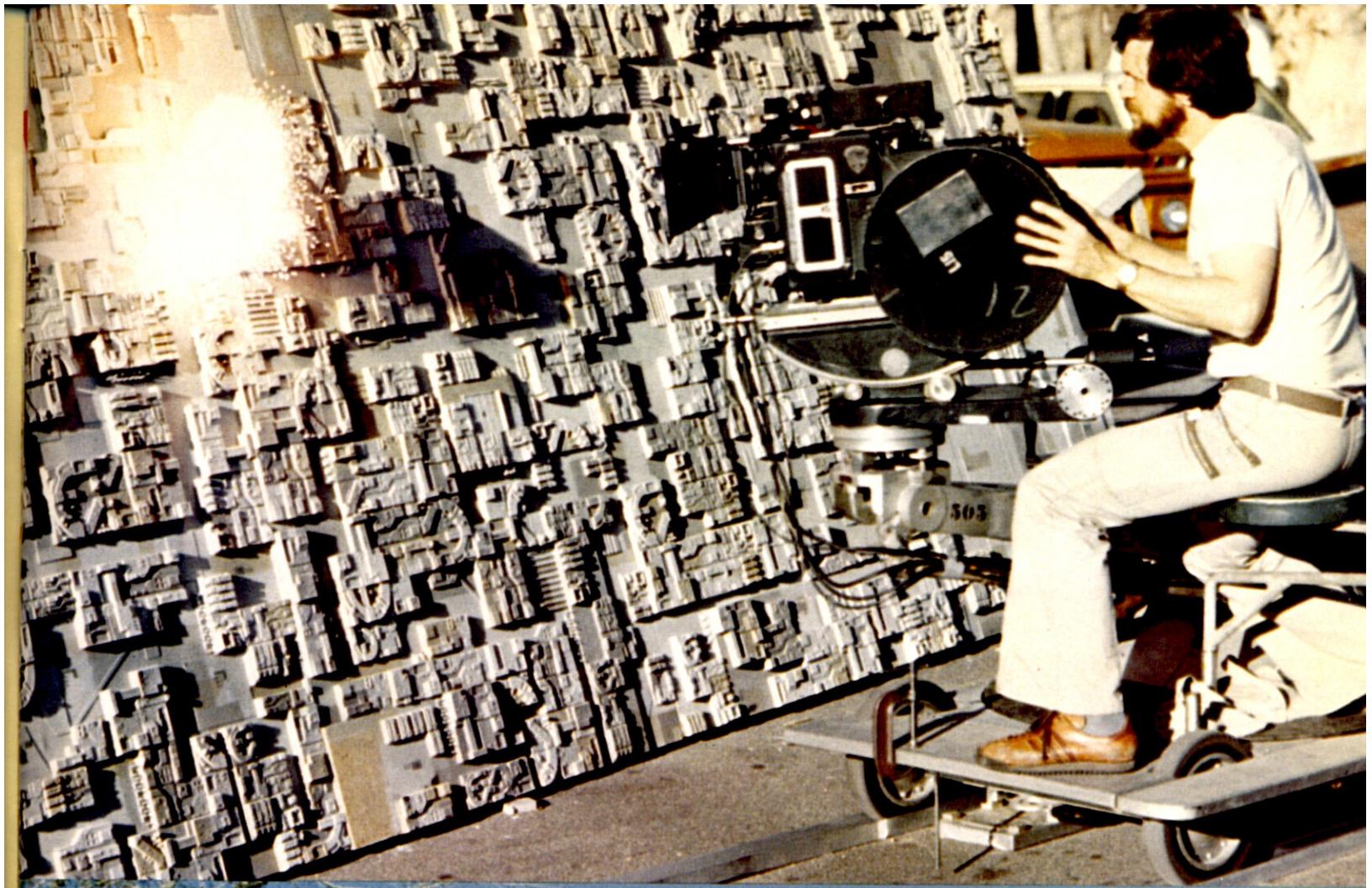
Industrial Light & Magic

"We walked into an empty building, and eight months later we had this complete special effects studio, with an optical department, rotoscope department, machine shop and more."

—Richard Edlund



There is no credit in *STAR WARS* for "Industrial Light & Magic," only for the individuals who manned its various departments. ILM, as the facility was called for short, located in Van Nuys, California, became the hub of the film's post-production, and the home of its fantastic special effects. *Right: 1st effects cameraman Richard Edlund films explosions on the surface of the Death Star created by Joe Viskocil in the ILM parking lot. Both setups involve a moving camera so that the shots can appear to be from the perspective of a ship flying past. Edlund is photographing the model shop's "Death Star Threshold" (top) which is a 4:1 reduction of the "Death Star Surface" (bottom). The model shop put together the "Death Star Surface" in two foot square sections cast in foam from molds. In the bottom photo, Edlund is in an elevator at right operating the camera as it swoops low over the explosions. The building in the background is, of course, ILM. Edlund is interviewed on page 17. Top Left: 2nd effects cameraman Dennis Muren sets up a shot of three X-wing fighters flying in formation. Because this shot called for little movement, all three ships could be filmed at once. Most ship shots in the film called for relative moves which require that each ship be filmed separately. Muren is interviewed on page 21. Bottom Left: The large six foot model of the Rebel Blockade Runner rigged for blue screen photography.*



"I'm not a revolutionary, not at all. Perhaps only in the sense that I figured that the people who did the work ought to get the credit and the money. I'm a Henry Ford. I took craftsmen off the benches in their own workshops and put them on an assembly line."

—John Dykstra

mechanical integrity. But it seemed to work out fine. I had apprehensions all the way through STAR WARS.

I just sat down with a piece of paper and said, "Okay, we're going to need blue screens and that camera, etc." I made up a list of equipment and made up a budget for it and started hiring people to put it together. Most of the guesses that were made up front turned out to be right. It was very, very hard to say specifically what was and what wasn't going to work before we built it. So we just had to take a shot at it and all I could do was bluff it and say "Oh yeah, everything's gonna be fine!" And it took quite a gamble on their part for them to say "Okay, go ahead, spend the money and build the equipment."

The reason I single out blue screen is that it never seemed to get done properly. Some major blue screen jobs of the past are simply wretched.

It rarely gets done properly because it's usually done by a dozen different people. Each person has a different concept of how it works or doesn't really care. The guy who's shooting it either doesn't give a shit what the optical house has to do with it or has his own way of shooting blue. He often doesn't care about blue spill or keeping the chroma of the blue down low on the stuff in the foreground. He doesn't pay attention to hair and filling in the proper areas or doesn't have time to, so if there is spill, it's washed out. And then they take it to a guy like VanDerVeer and DeLaurentiis says "Here, finish this or I'm gonna break your leg," or that's the rumor. He does the best he can with it, but he's not in a position to determine up front what the stuff should be. Whereas I was by having the optical and photographic systems in-house and by having Richard Edlund, Bill Rineholt and Robbie Blalack. All three worked together on making our blue screen system work. Up front, I decided it had to be in-house and it's got to be three people in direct communication with each other in regard to how the optics were to be combined. You know, they used to do that in this town. That's what the studios were all about. But they got too big.

Did you consider using front projection as an adjunct technique?

We had a front projection machine but I didn't use it.

Would you say that STAR WARS is one of the few science fiction films in history where the effects are as close to perfection as possible, in the tradition of 2001?

There are a lot of flaws in the film—many, many of them. There just wasn't time to do everything right. That can be improved, and I plan on doing it. But with the time and money we were given, I think STAR WARS is an amazing product. I'm really impressed with it as well as proud of my contribution to it. There was a very fortunate combination of personalities in-

volved and I can't impress that strongly enough on you. The key to it is that people worked 18 hours a day. People ate, slept, and drank STAR WARS while we were developing the equipment. Each individual in each area knew enough about the material that the next guy was working on to provide them with some help. Take the machinists, for example. Richard Alexander knew a lot about photography. Don Trumbull knew a lot about photography, too. He was doing the machine design for us. Bill Shourt was also doing construction and mechanical design. All of those people didn't write memos to one another or do drawings. They simply got in and did what had to be done. It was really a symbiotic relationship throughout the whole project. At one point we had one hundred people at ILM. It's simply amazing to have a group of people that large, working for that period of time, without having incredible personality problems, especially with as many creative people as we had.

How do you think it would have been if you had to do the effects for STAR WARS inside a major studio?

It would have been impossible! It never would've been done. Can you imagine? "Ladies and gentlemen, the tour is about to start. If you look over there, you'll see the production of STAR WARS's special effects. Please do not light any cigarettes or flash any cubes, because the light will expose..." It's that kind of thing.

It would be very hard to do STAR WARS just by setting up an independent facility unless you had the personnel to do it. The people who designed the equipment and constructed it made it all happen. Not only was it independent of studios but the people who were doing it are the best people in the industry right now. You know, this was a closed shop.

And of course there's another thing. You've got to deal with a lot of egos. It's really difficult to say who contributed the most or the least or the worst or the best. Even if we had the absolute best people in the world, out of that group, there's going to be ones who were the most productive and ones who were least productive. They may all be on top of a stack, but of that group, there were some who were producing more or less than others. It wasn't all a bed of roses from the time we started. There were a lot of people that had to be squared away. So we had the same kind of problems you have in the studio but on a much smaller scale by virtue of the fact that I had sole command here. George Lucas stayed out of my way and Fox stayed out of my way with regard to the administration of this place. I had a free hand to do things the way I wanted. It was very much a *laissez faire* situation—everybody was on their own, answering to themselves, and so there was a lot of mutual respect.

How do you see the STAR WARS phenomenon? How do you account for its overwhelming popularity?

It's an adventure-fantasy film. The beauty of it is that it gives you a fantasy background. It's all of FANTASIA in that sense—a total alien situation, a different world than we've ever experienced before. The film does not rely on the special effects or the future settings to make it interesting in terms of the storyline. It's an old story, action-adventure aero-fun in space. The

outlandish places that it goes are taken for granted. The film depicts a common way of living, and everybody does it. It makes it more believable, quite frankly. You know, "I'm gonna go out and get in an old P-38 X-wing." That's all pilot talk and that's all standard stuff, and people can relate to it. It wasn't "I'm-going-to-go-out-and-get-in-my-supersonic-ultralight-speed-saber-fighter-number-three." There were laser swords, but it was more like "Here, kid, take your father's old laser sword." And it's got a leather case. X-wings, star destroyers, millennium falcons—it was just everyday stuff. I liked that element very much.

The aliens walked around. They were just there. George threw so much stuff away in those shots. Something was always going on in the background—the Cantina stuff, another ship flying by, and so on. So there was always something of interest in there that wasn't presented for production value. It wasn't "Please note: we just spent \$10,000 on this robot. You will look at it." It just rolled by in the dust in the background. That kind of quality lends credibility to the whole film, not only to the storyline but to the models as well. The aging, of course, helped a lot. It's the things that people want to see. Total fantasy-adventure. You go in and get swept away.

In making STAR WARS, do you think you've created some kind of super-technological monster? Do you think it's a bad trend in science fiction films?

Oh, no, absolutely not. The public accepts what they want to accept and they attach to whatever they choose to attach to. I'm not knocking the film. It does worry me a little to see such a heavy cult revolving around something that is essentially very superficial.

When I turn on my TV set and see a bunch of people dancing to "Star Wars," I really feel a deep sense of commercial corruption going on.

I know what you mean. We could freeze STAR WARS and send it to Alaska. [Laughs] But we're not gonna do that! But it's okay, though. I don't mind it. I'd much rather have that than CLOCKWORK ORANGE cultism. That could've been frozen and sent to Alaska.

So the supersaturation blitz doesn't bother you?

Sure it does. "May-The-Force-Be-With-You." Oh Jesus! Hey, wait a minute, gimme a break. Don't ever say "Force" again! Use Victorial Doodah, anything, I don't care, just don't mention that word! I do lectures. Invariably someone makes a crack about The Force, or whatever, and you just get so tired of that. It's cliched. It's old, and everybody's seen it once or twice. So I say "Hey, don't ever say it again! Let's come up with some new material. I'll talk about the mechanics of it and how it was done and the behind-the-scenes stuff. But gimme a break!"

I guess George Lucas knew what he was doing.

He's a hell of a business man.

You kind of knew that "The Force" would be on tee-shirts a week after the film was released.

It was happening even before that. They were into manufacturing that long before the show was released, I'm sure. Let's face it. It's just part of the enormous acceptance of the film. It's a very commercial

picture. I like it, though. I don't care. It's sort of a *GONE WITH THE WIND* concept as far as I'm concerned. It's a big draw picture, total fantasy. There really isn't much in it in terms of violence or negativity and it's good nickelodeon stuff. It's just that thrill. It brings adventure back into motion pictures instead of seeing slices of life where you go in and watch somebody else's problems displayed on the screen before you.

It's a very opulent fantasy, don't you think?

But it was inexpensive opulence. It only cost \$2½ million for the special effects in *STAR WARS*. \$2½ million, 2 years, 365 special effects shots. I think that's a bargain. We had a 3:1 shooting ratio, with three or four elements per shot. That doesn't count the optical composites. Each of those elements broke down into three to five elements per shot for each composite. That's how much had to be produced in the allotted period of time.

Do you see yourself as one who has revolutionized the special effects field with regard to the hardware you've developed? Do you consider yourself a revolutionary?

Oh, no. I'm not a revolutionary, not at all. Perhaps only in a sense that I figured that the people who did the work ought to get the credit and the money. I'm a Henry Ford. I took craftsmen off the benches in their own workshops and put them on an assembly line. I guess that's the easiest way to answer it. I don't think we've done anything that hasn't been done before in one manner or another, but it's certainly the first time it's come together on this kind of manufacturing level.

Do you think we are just seeing the tip of the iceberg as far as special effects goes? Now we're getting into lasers. Do you think there's much more to uncover?

Holography, lasers, all that stuff is quite a ways off. I don't see it happening. I'm real pragmatic about it and I'm not afraid to say it. I don't see projecting lasers for quite a while.

Look at *LOGAN'S RUN*. That's as good as they can do so far. "*LOGAN'S RUN has lasers! Come see LOGAN'S RUN! See holography, holography, holography!*" Well, the holograms looked like crap. Then you do the simple double exposure we did in *STAR WARS* and people say, "God, that's amazing! How did you do those holograms?" And that's what I'm talking about. The people who did *LOGAN'S RUN* sat down and said, "Look—we'll use holograms! Think of the advertising potential! Think how wonderful it'll be to see it on film!" They had absolutely no concept of what a hologram was. Some techno-fiend from San Francisco sold them a bill of goods and said "Oh, you can photograph this. It'll be in three dimensions." Bullshit. It's a two dimensional medium for now! What difference does it make, whether you are photographing a hologram or double exposing something?

That's all part of public relations, I guess.

Exactly. It's a public relations gimmick predicated on the director's or the producer's concept of being able to bilk the public by telling them there were holograms in the show and having the public expect to come and see something in three dimensions. The trick is that they never say anything other than it has holograms in it

which, to most people, means a 3-D projection of some kind. Nobody really knows what a hologram is and very few people have seen them. There's a lot of stuff like that now in films, and everybody conceives of this really incredible thing happening on the screen. And it doesn't.

Dino DeLaurentiis' mechanical marvel is a strong case in point. That has to go down as the biggest piece of false hype in special effects history.

It was total hype. However, how DeLaurentiis ever expected anyone to build a fucking forty foot ape with the ability to walk down the street and climb a building is totally beyond me. I know little kids who know better than that. And he's buying this bill of goods, that somebody's going to actually do this. It's crazy! And that's the classic thing that pisses me off, too, because that's the kind of salesmanship that kills the motion picture industry's willingness to provide money to creative people to do unusual concepts. That'll ruin it. And I don't sell anything I don't figure I can do.

Do you see your developments in special effects as applicable to films of other genres as well?

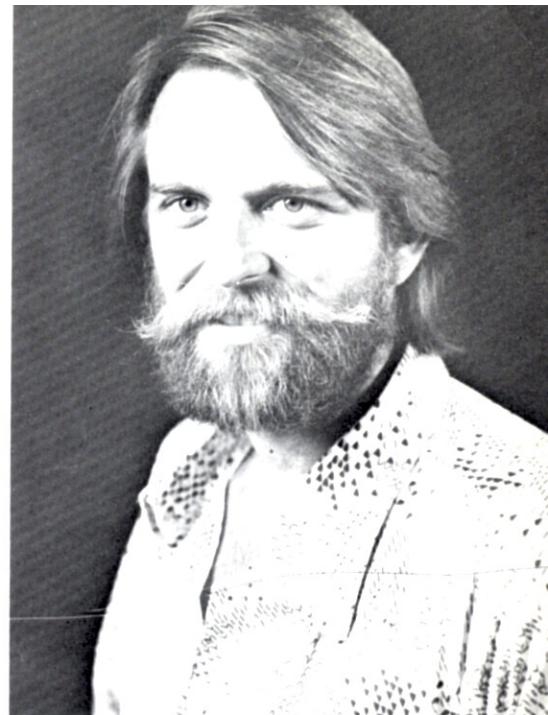
Oh, sure. I would like to use special effects in combination with drama in a fashion that is not discernable as having a fantasy or science fiction background. I would like to be able to change a time frame for dramatic purposes. I'm thinking of a scene of two people in a single car, and within the same scene, relating to two different time frames in order to prove a dramatic point, without an intercut. You might shoot one person at 45 frames per second and doppler his voice and bring it back to normal pitch. Really creative special effects can be used in other ways than by simply defining scientific or fantastic phenomena.

Do you have anything specific in mind?

I have this wild idea of doing my own version of *MARAT/SADE*. That was a film I particularly liked. One of the things about it is that it was done in a single room, yet it embodied a great deal of depth, a variety of visual imagery, and a real story. To me it was almost lyrical, and one of the lyrical aspects of it was the way in which the visuals were handled and the way that the scenes were choreographed. Now it seems to me, one might say that when you reach the point at which the film is recorded in the camera, you must cease. That's it. It's like putting pen to paper, and the writing on that page is the final element. With film, it can be a different story. You can take that visual imagery another step further. It's something that can be subtly handled through conventional techniques—timing, color reproduction, etc.—but at the same time I think there's the ability to get particularly unusual scenes by the use of blue screen. Of course, the specifics would come up conceptually as the story is generated. I'm just saying that I'm open to the potential of using special effects, not only to bring production costs down, but to enhance what you do specifically with conventional live photography.

What do you think of when you let your visual stream-of-consciousness flow?

I'm thinking of a gorgeous sunset that didn't happen. Or a train coming across the prairie. You want to create an ominous feel to the scene, and it's very important visually that the scene be particularly ominous.



John Dykstra.

This is the subtlety I'm talking about. There's no reason why that scene cannot be combined with, say, time lapse clouds or just a slight overcrank to give them more drama. There's no reason why we can't portray a particularly frustrating scene with subtle changes going on with the color of the background that cannot be reproduced on a set. It's looking out the window and seeing a panorama that doesn't exist anywhere, making it up of elements.

It sounds like you're suggesting surrealism.

Yes, it's surrealism in a sense. Actually it's less than surrealism—it's not ultra-real—it's actually the modification of reality. But surrealism is not a bad choice of words because I love surrealism, and that's one of the things that effects could be used to do, to give an ultra-real sense to a situation in a visual way that would normally have to be handled with dialogue or with music.

Do you think you've opened doors for future fantasy films and for other individuals who wish to produce them?

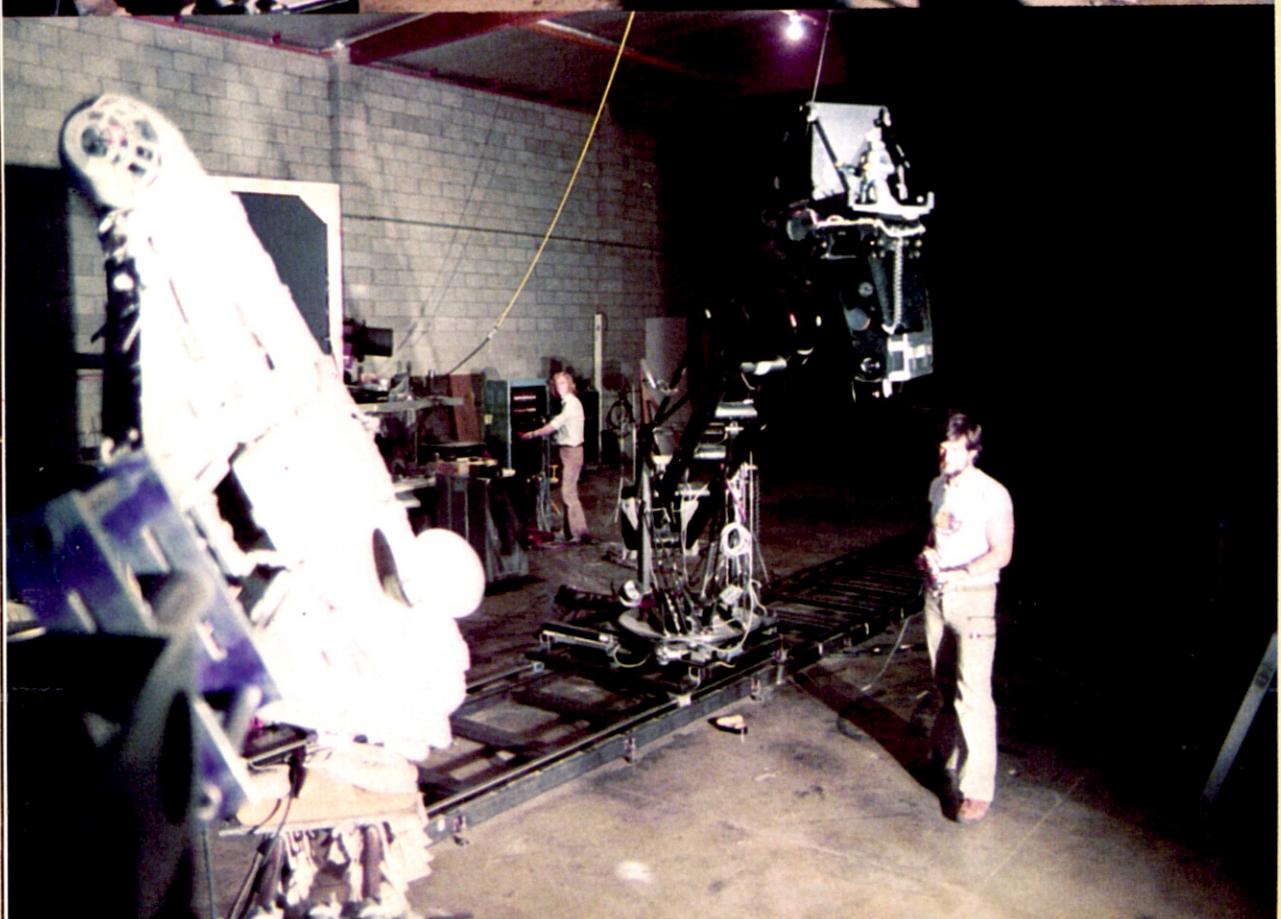
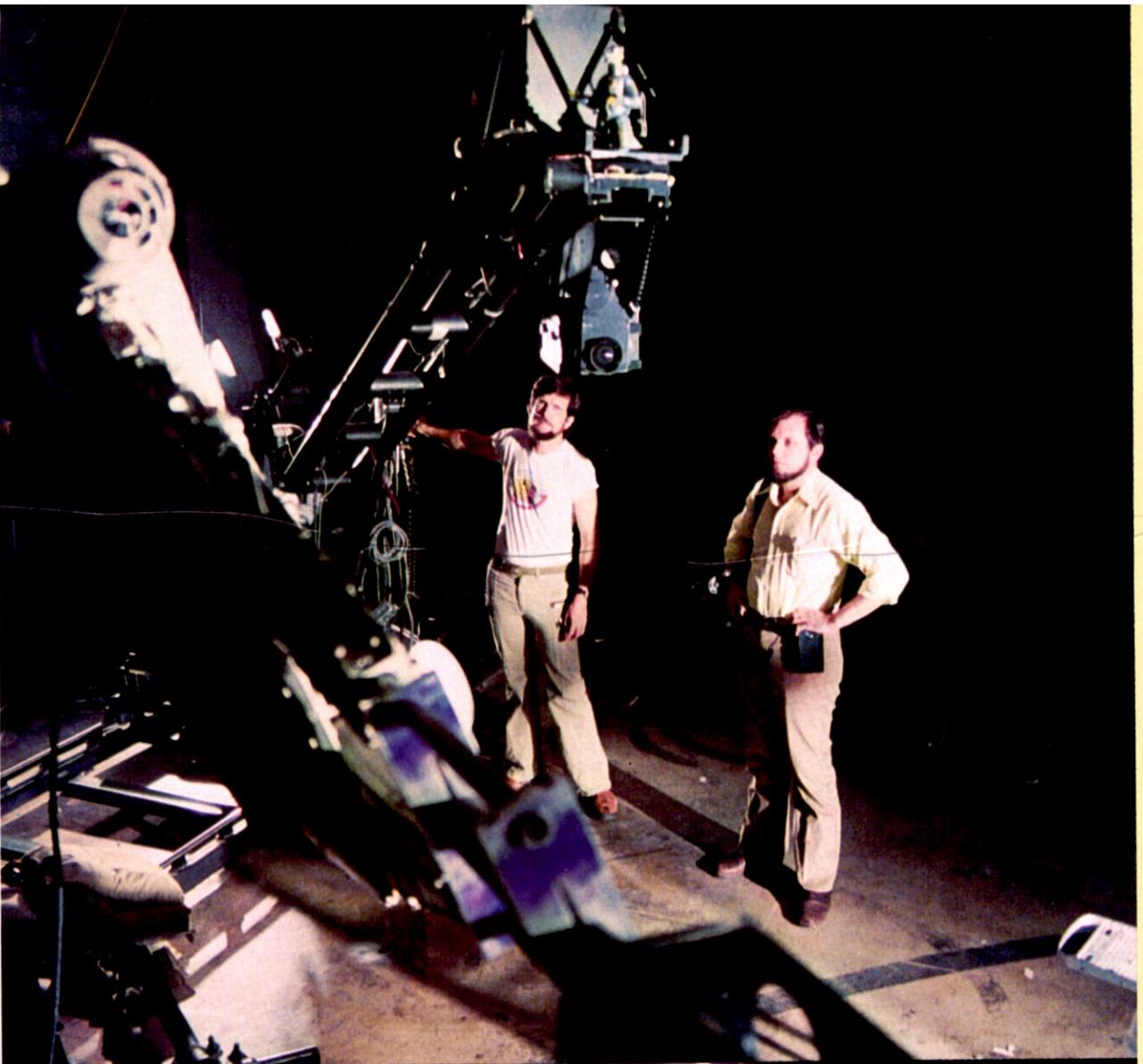
I think that doors have been opened in the sense that the money is now available because people have come to have faith in the possibility of producing special effects in a feature film for a decent budget. I think that studios, by virtue of seeing this take root as it has, are ready to put some bucks up to take a chance on real fantasy themes. And I don't necessarily mean outer space. I mean all of the traditional places—the center of the earth, the ocean, every place where it is very unlikely that you would go with a film crew and set up location shots.

We came pretty close to what we initially set out to do on *STAR WARS*, and we had a lot of stuff added to what the package was initially. As it turned out, rather than going enormously over budget, we stayed pretty close to what we originally set out to do. I think that by putting the effects together under one roof and by very carefully handling the communication problems I spoke about before, we have proven to a lot of producers that special effects can be worked out and for a reasonable amount of money.

Dykstra •flex Camera

"Al Miller is an electronics designer. We sat down with two bottles of wine during the old Future General days and figured out what the machine ought to do, what it ought to look like, and how to program it. Basically, it is just a combination of all the techniques that have been used for years into a sophisticated device capable of manufacturing techniques."

—John Dykstra



Top: 1st Effects Cameraman Richard Edlund (left) demonstrates the operation of the Dykstraflex camera for producer Gary Kurtz. Han Solo's pirate ship, the Millennium Falcon, is mounted for photography in the foreground. *Bottom:* A different angle on the same set-up. Richard Edlund (right) controls the movement of the Dykstraflex camera with a rheostat, or "joystick" as it was called, which he is holding in his hands. The camera is on a boom arm with eight feet of vertical travel, and is mounted on a 42-foot track for horizontal travel. In addition to these moves, the "joystick" also controls the motors which operate the camera's pan, tilt and roll axes of movement. The versatile Dykstraflex can pan and roll all the way around, and can tilt from straight down to 30° up. As Edlund programs the camera moves, assistant Doug Smith (left) enters them into computer memory which allows the camera to repeat the exact same moves for each element of the blue screen composite. In all of the frenetic outer space action in STAR WARS the ships never moved an inch, it was the movements of the Dykstraflex camera that created the illusion of flight.

Obviously, because we're creating an unusual situation, the director or the person who is in creative control of the film has to exercise a great deal of restraint with regard to what they change after they set about doing it. Everytime something gets changed, it costs them a lot. That education is invaluable in terms of anyone who is going to direct a film like this, because there are certain things that are very expensive to change. And if you just shotgun the whole thing, you're obviously going to come up with a very, very expensive show.

George Lucas was pretty good in the way that he set about doing *STAR WARS*. He was pretty "right on" with regard to what he wanted. He was very concise about it. A lot of changes were made but they were editorial changes as well as script changes, and for the most part we moved through it with a fair amount of ease.

Since our shooting ratio was about 3:1, we weren't shooting dozens of shots from different angles to cover a scene that was only going to use one of them. We would do master shots on the special effects when they were called for, but unlike a film like *2001*, we didn't do a master and then shoot a dozen or more closeups to simply cover the scene as you would in live action. We worked to a more specific kind of storyboard. And I think that's one of the things that in the past has been difficult for special effects people to do. Often times the directors have very little understanding of *specifically* what they want when they deal with a fantasy situation. Their visual concept is totally ethereal. They sit there and look at the screen until they see what they want. George Lucas was good in that way. Whenever there was a question, it was a matter of me pressing to get an answer from him—a concise and simple and direct answer—and that's one of the things that contributed to the efficiency of the group, and resulted in the film coming in close to budget.

The product was certainly worth the money spent, *thereby* providing the studio with some faith in the ability of special effects to give them something production dollar-wise that will show up on the screen. *That* has opened doors for people in the sense that studios are now less prejudiced against a film that involves a lot of effects.

What are your plans for the immediate future?

Right now I'm considering getting together a corporation of some of the people who were working on *STAR WARS* in key positions. If that happened, we'd be in the position to negotiate for some good deals, not only for ourselves but for other persons involved in the industry who might be working for us. It's a complex thing. But it goes on and on—the politic of motion pictures, how to get money in order to produce, how to make a living, notoriety, and all that other stuff is something that you've got to deal with day to day. I'm coproducing *GALACTICA*, but what I'm basically bargaining for is the opportunity to direct some television work or feature work—either one—as well as supervising the special effects. What happened on *STAR WARS* can happen again. That trend of film is coming back in a big way, which means we're all going to have work and there's going to be some really great achievements. It's durable, I'm convinced of that. ■

RICHARD EDLUND

2nd Effects Cameraman

Richard Edlund has been a cameraman since 1963, getting his union card as a first assistant around that time. He worked for Joe Westheimer's optical effects house for four years. "At that point," says Edlund, "I decided that I didn't want to clap slates until I was handed a lightmeter." He left the film business for two years and got into rock 'n' roll photography, album covers, promo films, and just a lot of experimenting. "I drove cable cars in San Francisco, stuff like that." During this period he designed an amplifier called the "Pignose," a miniature amp run on batteries, used primarily on the road for tuning-up purposes, remarkably compact and high in sound quality. "We gave them to all the heavies—the Stones, the Beatles—and started building a sort of 'legend.'" With a partner, and someone with capital, the amplifier eventually became a production item. Richard got back into film, working at Bob Abel's commercial house for a year and a half, doing electronic controlled photography on spots like those dazzling 7-Up commercials. He was hired by John Dykstra for work on *STAR WARS* and became one of the key elements in the formation of Industrial Light and Magic in Van Nuys. He is currently at ILM, now under the umbrella of MCA-TV, working with John Dykstra on the special effects for *GALACTICA*.

*How did you become involved in *STAR WARS*?*

Dick Alexander and I are friends. He is the machinist who basically built most of the equipment and kept everything going, and he was a good friend of John's. It was through him that John found out about me.

Apparently Gary Kurtz had taken the project around town, and it was obvious that the technology was not there to do the show. John told him, "We'll do it. It'll cost a lot of money for us to build the equipment, but that is the only way it can be done." Otherwise, it wouldn't have the right look. John asked me if I wanted to be involved. He needed a cameraman, and asked me what I wanted to do. I said I would accept the job of first cameraman or director of photography. It sounded like a great project to me, and I really liked George's two previous films. I jumped at the chance. We walked into an empty building, and eight months later we had this complete special effects studio, with an optical department, rotoscope department, machine shop and more.

John told me that George wanted to make the film because he wanted to have

this fantastic battle scene at the end of it. We started kicking around ideas on how to do it and the photographic processes we'd use. I met George and saw a 16mm film he had put together which had the basic dynamics and screen direction he wanted. It was cut from a bunch of World War II movie dog-fights, some Korean War jet footage, just a hodgepodge to show the dynamic of what he wanted. From that we modified and modified.

As first cameraman, did you work at all with Grant McCune in developing the models for photography?

Yes, in terms of the photography, trying to limit, because it was a monstrous project. I'm sure that a lot of people would have laughed—did laugh—at the idea of trying to do that much in a limited amount of time with less than double the amount of money that Kubrick would want. So Grant and I were very closely-knit. I would participate only in terms of trends, how the engines would look, how to mount the miniatures to make it as versatile a set-up as possible.

What are some of the primary problems involved in miniature photography?

In miniature photography the first, most basic problem is to make it look real. I felt that the opening shot was the most important shot of the movie, because that is what would take everyone away from being in the theatre into that leap of faith. George was very worried about that shot also. If you blow it there, and the audience is not completely tottered out, you've lost them. The sound effects and music helped a great deal there, too. In other words, the first shot sets the style and the tone and the look of the picture. So initially, if you see and accept that, then you've got it.

Why did you use the VistaVision eight perforation format?

I had poked around about a year earlier and had discovered VistaVision equipment. John Dykstra probably discovered it concurrently. The idea of working with a large negative of that size was very exciting to me. Technically, you can't shoot miniatures with Panavision lenses, or anamorphic lenses, those that squeeze the image and then unsqueeze it in projection, because of all kinds of optical problems. The depth of field is very strange. You can't get very close to miniatures because they start distorting in weird ways. You have to shoot with spherical lenses or use models ten times the size we used.

VistaVision is a double 35mm frame. One of the basics in special effects is that you know that you're going to have to dupe film. You have to shoot the foreground and the background as separate elements, unless you use the held-take system, which is a very laborious process. We didn't have the time to deal with that. *2001* did that, but most of their shots were single-axis moves, very ponderous, grand shots that just sat there on the screen for a long time.

Before *STAR WARS* nobody had ever seen a spaceship do these kinds of things. That's why we wanted to do it. So it was a matter of settling on the scale of the entire project, how big the models would be, because you can't have anything that goes out of focus. That's the prime rule. Anything that goes out of focus is a dead give-away. We wanted the models to be as small as possible so they'd be easy to heft

INTERVIEW BY MICK GARRIS



1st Effects Cameraman Richard Edlund.

around, yet large enough so you could get the camera close enough to make them look big.

What is unique about the Dykstraflex camera?

It is a large-format camera that is smaller than most standard-format cameras. It will pan, roll around all the way, tilt from straight down to 30° up, and boom up and down. It is on a 42-foot length of track, electronically controlled so that you can run the total length of the track, then back up and make exactly the same moves again so precisely that you can't tell the difference.

Did you use double-pass matting?

No. That's what John wanted to do. That was the initial idea, but I felt that blue screen was the way to go.

What made you choose the blue screen process?

Because, first, you can use conventional cameras, second, your matte is obtained from your original negative, and has the best chance of holding size and matching exactly. We did some double-pass matting, but in order to utilize the technique for most of what we were doing, the exposure of the matte would have to be absolutely the same as the exposure of the object, otherwise when the models streak, as they did a lot, the streak of the matte has to be exactly the same as the streak of the model. You have to fill in all the shadow holes so you don't leak the matte. It would have been ridiculous to do it double-pass.

I knew that if we did develop a blue screen system, that it would work. I had complete faith in that. George did worry about it. Not that much blue screen has been done for a long time. But I think we have taken the stigma out of blue screen. If you have enough time and money to go into it all the way—and we had the best consultants that were available—you can do it. It hasn't been used in a long time because producers worried about it. They'd see bad blue screen shots. They'd see blue fringe. But I had seen many shots done where you couldn't tell it was a matte shot. So I had

faith in it, I knew it could be done. Not only that, but I knew if we were going to build a production system to handle that volume of work, that we had the two basic tools you need for successful special effects. First is an absolutely repeatable camera system, so that you can make multi-pass shots repeating the identical move in the shots for each element. Second, you need an absolutely reliable matting system. Those are the two main ingredients. If you don't have them together, you're in trouble or at least severely limited in what you can do. Al Miller designed the motion control system, which was just *unbelievable*. It was so reliable that we didn't have any down time ever.

What sort of communications problems ensued between George, who was overseas a good portion of the time, and the effects crew at Industrial Light & Magic, sequestered away in the San Fernando Valley?

Just that, filming was taking place 4000 miles away, and we're back here. George can only be in one place at a time, and we had a hell of a lot to do. We had bitten off a big chunk, first of all, just in saying we could do it. But we all figured that we could. The fact that George was not here during the initial stages of development caused us to shoot a lot of stuff that he didn't accept. We shot and tested, and we had the machine working and ready for him to wield when he got back.

How free were you in developing shots and techniques without Lucas being there?

We had total freedom without him there. We had the dog-fight film, and we had spent a long time going over storyboards and conceptual material. Joe Johnston did the storyboards. He was just amazing. He did an awful lot on *STAR WARS*.

When George did get back, he spent about two weeks on the stage with me everyday. I'd make a shot on black-and-white stock so he could see what the move looked like, and he spent a lot of time going over it. He'd say, "What would it be like if we moved this way instead of that way," because he had the whole cutting plan in his head. We couldn't have that. We had his dog-fight film, so we knew how the effects shots were cutting. Working with George on the sequence, he recognized what the limitations of working with the system were, and could then begin to live with those limitations in terms of his imagined effects scenes.

*How many new techniques and forms of equipment were developed specifically for *STAR WARS*?*

Each new situation that we faced presented a new problem, and a solution would often entail doing something which had never been done before. The running joke at ILM was doing something new and shouting "Another first!"

One of the most impressive facets of the special effects was the realistic simulation of speed, particularly in the trench sequences. How was this achieved?

We knew that there was a certain dynamic that it had to have, and I knew that George wanted the ships larger within the frame than most of the World War II footage we worked from. In that, there were planes missing you by a hundred feet or so. When the head for the Dykstraflex camera was being designed, I tried to keep it as narrow as possible, honing off a half-inch here and there, making it so that you could

get the models close to the lens. The closer you can get the lens to your subject, the nearer it can pass you by, hence the more dramatic the effect. The traditional effects cameras are *humongous*. The other camera, the sister unit for the Dykstraflex which we used for backgrounds and star fields, was a converted Technicolor camera which was about a foot high and about ten inches wide, mounted on a huge head. The angular displacement and all the motions it did were electronically matched ratiewise to the tracking camera. So a shot that was made on the long track could be taken over without the track loop, using only the pan, tilt and roll to shoot the stars at infinity.

That's another thing. The old concept of multiplaning stars that you see all the time is so phony and ridiculous. You'd have to be in a rock storm for anything to be passing that fast.

Set up the dog-fight sequence for us.

The real quality of the dog-fight track is visceral. You don't remember anything in particular about it. It's moving so fast. There's so much action. Let me make a point about that visceral quality that we were after. When we got the dailies, we'd see on the screen this smoky blob go flying by. And here's another. It's on this blue background. It's real hard to put it in context. There's all this junk in the scene, used to light the object and move it around. There's a key light, with a bunch of flags in front of it, and there's another flag down here to keep light off the pylon, another light down here with a big flag in front of it, a pylon sticking down with some velvet wrapped around the bottom of it, sitting on a track with a turntable. I only realized that *that* was how it would really look after shooting some film and seeing what we were getting. It's disappointing when the guys in the model shop spend 4000 man hours detailing every little bolt, and here's this flash coming across the screen. You can't see anything in that particular shot. In another shot, you may see one little detail. As a whole, you get to know what the model looks like, but you never see it in one shot. That's underlying everything that we're doing, the realization that—with the exception of the big ships, which you do see, and the Death Star, which is just sitting there—the ships are fairly visceral, rather than visual.

When George came back from England, we spent that time shooting film tests of each shot before we'd shoot it. Using the reference film we'd done part of the sequence, and we'd done part of the cutting. The sequence might call for a guy in the cockpit yelling something, looking over to his left. We pick up his line of sight and cut to the plane in the reference film representing the ship he sees. To film that we put the ship up on the pylon, put the lights on it, and turn on the Dykstraflex camera. Our control is a rod with twelve pots, or knobs on it which make any one of twelve motors go backwards or forwards. I start by programming the track, which is the grossest move. From the film we find out how big the object wants to be at the start of the move, and how big it wants to be at the end. So I turn the pot, the camera goes up the track, it may accelerate, slow down, and come back. The ship never moves. That's the illusion. The camera moves. The model is lit. You don't have to light the whole stage. You're essentially locking off

the ship and moving the world in relation to it. Perhaps it has to move from one side of the screen to the other. It has to have a nice curve. You start by programming a pan, with an acceleration and deceleration to it. Then the tilt has to match it. It has to roll a bit. After you program one element of the camera motion, you run it back to the head, then program the next one, while playing the first one, and so on. The most complicated program was the Millenium Falcon backing out of the Death Star docking bay. That shot was like backing out of the garage. It had that quality, which was kind of funny. It was a real hair-puller.

We had two schools of thought working on the film. One was the *supertechnological* school, where everything is hooked up to wires and electronically controlled. Personally, I belong more to the seat-of-the-pants school. There was this huge box built to sequence all of the lights on the miniatures. I decided early on that it was just far too machinelike. If you used it, and made *absolutely perfect curves*, then you've taken the human-ness out of it, and it looks phony, like computer-image stuff. The geometry is so perfect that it's not interesting.

How would you rate the STAR WARS special effects?

I heard someone give them 3.5 on a scale of 10. I would have to agree with that. I think if you shoot for a scale of 10, that much, much more could be done than STAR WARS accomplished.

What would you score higher than 3.5?

I'd score certain parts of 2001 higher, simply because they had incredible amounts of time to do it in. They were able to spend months on a shot, where we would only spend days. Our opening shot, as important as it was, only got three days on the stage, and that was it.

Most of your time was spent developing techniques, and by the time you got them down pat, the deadline for delivering shots was upon you. Were you able to do the best you were capable of?

We were able to do our best. Sure, we were real pleased. I'm pleased with it, even though it gets only a 3.5. But in retrospect, when you stand back after it's all over, with what you know now, I look at it from a technical standpoint and say, sure, it could be much better. George might have another way of looking at it. I look at it from the cinematographic standpoint.

How would you sum up your feelings about the film, and working on it?

I don't have any bad memories of STAR WARS. It was just a wonderful experience. The only time I lost any sleep was when I'd worry about whether or not we'd blow the illusion at some point. I probably lost a couple nights of sleep on that. Doing a project as large as this one is a learning process. It was building a Stradavarius, then learning how to play the thing.

STAR WARS has made special effects connoisseurs of a lot of people. We sit back and laugh about the original FLASH GORDON serial, where the sparks are falling down from the rockets and the smoke is going up, but that was once the state of the art. Illusion recognition is going up exponentially, and twenty years from now, STAR WARS is going to look just as corny as that. Perhaps not. It'll still be a classic. We can still look at FLASH GORDON and dig it. Your leap of faith is in a different direction.

ADAM BECKETT

Animation and Rotoscope Design

"My pet shot is the one where the little Jawas used an electrical weapon to shoot R2D2 near the beginning of the film. That was my own hand animation. It was somewhat inspired by Josh Meador's animation of the Id Monster in *FORBIDDEN PLANET*."

Adam Beckett is an animator and filmmaker, the son of an architect. He was born in 1950 and lived most of his life in Los Angeles. "I spent my first eighteen

INTERVIEW BY PAUL MANDELL

Paul Mandell is a film historian and stop-motion animator living in New York City. He did title animation for an NBC special and received a grant from the AFI for a research project on special effects in 1974. His long awaited book, *The Fright Factory*, will be published this summer.

Adam Beckett animating electric arcs on R2D2 for the sequence in which the robot is blasted by the Jawas with an electric gun. Note diagram for the robot's escape pod on wall.

years collecting about two thousand science fiction books and doing drawings." He attended college for two years at Antioch in Yellow Springs and started animating in 1968. He then went to Cal Arts working towards a Master of Fine Arts degree but stopped school when he began working professionally. Later on, he returned to Cal Arts in a teaching capacity.

Adam has completed five animated films with some very interesting titles: KITSCH IN SYNC, HEAVY LIGHT, SAUSAGE CITY, FLESH FLOWS, and EVOLUTION OF THE RED STAR. The latter one is about to be distributed theatrically in 35mm, part of the new trend to bring animated shorts back into movie houses. Several titles are currently in the works: DEAR JANICE, KNOTTE GROSSE, and LIGHT IN THE ATOM, a film that he's been working on sporadically during the past seven years and one that he hopes to finish in the near future. STAR WARS is his first feature film credit.

How would you define rotoscoping?

Rotoscoping is a process that gives you the capability of making artwork that precisely matches an existing image on film. The actual process involves a camera/projector unit that enables you to project an existing image and to photograph artwork traced from that image. We had two separate rotoscope units for STAR WARS. One projected the image from the bottom off mirrors onto the underside of a sheet of paper or cel, which meant that we had to use translucent or transparent materials. The other camera projected from above directly down onto the art surface, which meant that the image was visible even if we used opaque art materials. The essential gist of rotoscoping is that it enables one to project and rephotograph repeatedly.

How did you get your job on STAR WARS?



"Production supervisor George Math-
er mentioned the fact that for about
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Can you imagine STAR WARS not
being finished?!"

—Adam Beckett

Mainly through personal recommendations. Several people on the film had worked with me on previous occasions. Richard Edlund, I think, was primarily responsible for my position on STAR WARS. I understand he gave me a really good recommendation. I should mention that I had spent a year at Cal Arts teaching optical printer and animation camera techniques. As an exercise, we made a film there, which has been around a little bit, called KITSCH IN SYNC. Two people who worked on that later worked with me in the rotoscope department on STAR WARS: Michael Ross and Peter Kuran.

You have several interesting animated short subjects to your credit. Did you find that you were able to exploit your artistic abilities on STAR WARS?

Some of my work, HEAVY LIGHT for example, is kind of in the vein, so they tell me, of the 2001 Star Gate sequence. Typical visuals included flying down an incandescent tornado and glowing, heaving plasma formations. When I went to work on STAR WARS, I thought there might be a call for stuff like that, a lot of really interesting animation to do. It wasn't until six

The Rotoscope Department at ILM. Photos are captioned by department chief Adam Beckett. Left: Byron Werner in a candid view with a certain cybernetic organism, Mr. Werner is a painter with the Zen outlook needed for precision "ink-and-tape" work. Middle: The Bozotron (the rotoscope unit used on Cecil B. DeMille's THE TEN COMMANDMENTS) in rotoscope mode with evidence of cel usage in foreground. Right: Lyn Gerry (left), Michael Ross and Adam Beckett. Mr. Ross was there from the beginning, animating many a laser including the Death Star's mighty zap of Alderran. Ms. Gerry is in front of one of her varied organizational charts.

months into the picture, however, that it became apparent that there wouldn't be as much special animation required. My department's main function was to provide really bread-and-butter elements. Every special effects shot in STAR WARS has got at least one element from the rotoscope department, even if it's only a garbage matte. Then, of course, there were the ship lasers which were animated mainly by Michael Ross and Peter Kuran. It was good experience in organizing that kind of production. But it wasn't until the last three months or so that some really interesting stuff came up.

Is there one shot that you were particularly fond of?

My pet shots are the ones where the little Jawas used an electrical weapon to shoot R2D2 near the beginning of the film. That was my own hand animation. By the way, it was somewhat inspired by Josh Meador's animation of the Id Monster in FORBIDDEN PLANET. That was a kind of impressionistic rendering that worked. I always look forward to seeing that piece when I see FORBIDDEN PLANET. In doing the R2D2 shot, I used the Id Monster as my standard of quality. Unfortunately for me, it was done from a squeezed image and as a result, whenever I see it unsqueezed, it looks weird to me.

What would you consider to be your toughest shot in STAR WARS, if you could single one out?

The one that had the most work in it was the shot of the laser tunnel in the Death Star.

American Cinematographer described that composite as a miniature background, a blue screen component of the actors, a hand-drawn platform, and "Adam Beckett's sophisticated multiple-pass animated laser effect." Could you explain that terminology?

What it means is that on that particular shot, the film was run through the camera sixteen times on the final take. Sixteen passes aren't really a great deal, however, in relation to some other things that are done. I've looked up the word "sophisticated" in the dictionary recently and it isn't a particularly flattering word, at least in my book. It tends to mean "artificially complicated" and so on. But we really put an enormous amount of work into that shot. Peter Kuran worked on that, too. He did the airbrushed light reflection on the wall of the

tunnel and the "hand drawn platform." Pete is quite a phenomenon. He's twenty years old, from New Jersey, and he's been into film all of his life. I hear his mother catalogued at least 70 or 80 "super-eight epics" before he reached his teens! I'm sure you know the type of guy I'm talking about. He turned out to be invaluable in the roto department.

The animated overlays on the front projection light sabres were done with great precision.

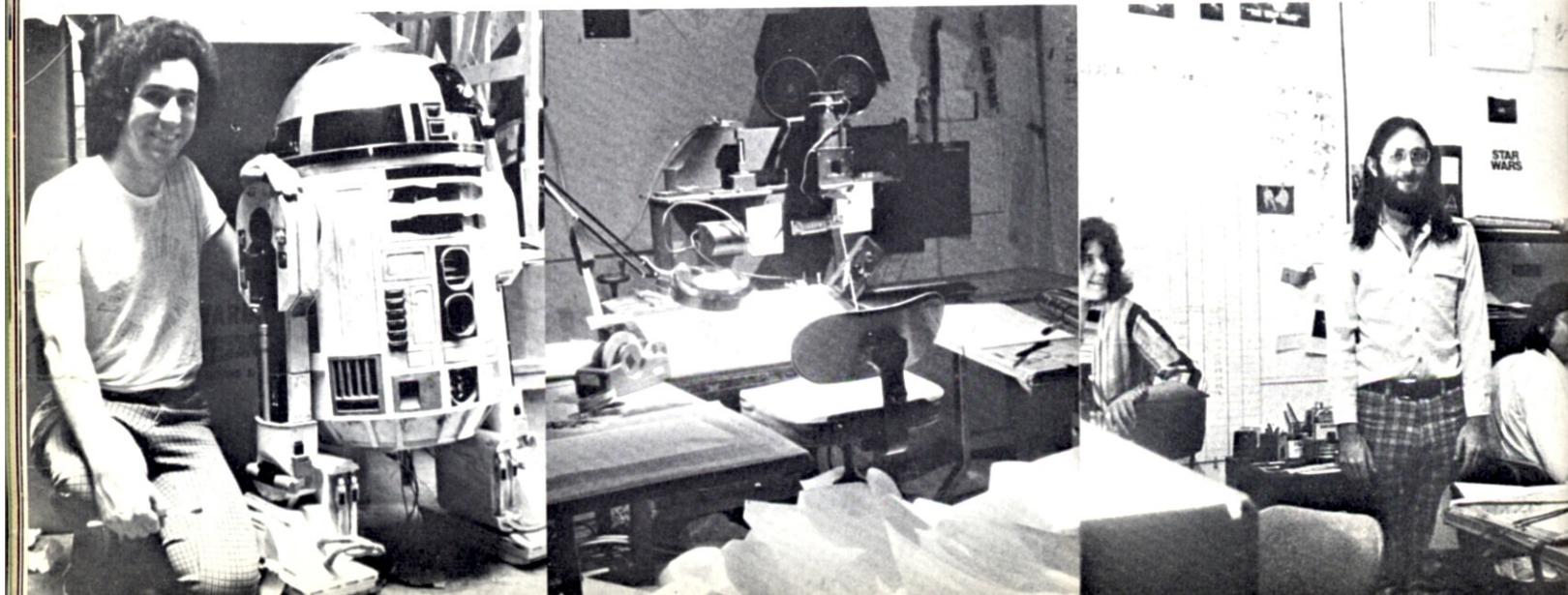
I don't know if you're aware of this, but just about every optical house in town worked on STAR WARS. Those laser swords were done mainly by Barry Nolan at VanDerVeer Photo Effects. Barry works closely with Frank VanDerVeer, and he's been designing and building an electronic optical printer for him. I believe they did that sabre effect over something like 4500 frames.

Who did the overlays for the hand laser guns?

Again, those were done outside ILM. They were all completed by Nina Saxon at Modern Film Effects. I had one or two picayune arguments with the animation, but for the most part it looked great to me. She did a terrific amount of work on those shots, rotoscoping, animating, and shooting them herself.

What type of equipment were you using at ILM?

That's an interesting question. As a total contrast to the much-publicized, space age Dykstraflex equipment, we were using the exact same rotoscope camera used to do the effects for Cecil B. DeMille's THE TEN COMMANDMENTS in 1956. It has a service plate signed and dated by many technicians over the years, the earliest of which is 1925. Douglas Barnett eventually built a second rotoscope unit from scratch, complete with foot-operated platen, and exposure controlled in one-twelfth stop increments via a capping shutter. One feature or lack thereof was that we had no camera movement or artwork movement mechanisms. In one shot a planet with a subtle "east to west" motion required a rather exact matte. Several unsuccessful ones were made using *animated artwork* which is a little like bailing out your bathtub with a teaspoon. Finally we taped an engineer's scale from the machine shop down and did the pan on one piece of artwork looking through a magnifier at the one-hundredth



inch scale, which worked the first time.

Did you have any problems with the VistaVision format?

I really didn't have any problems; they were all basically solved for me. VistaVision is a *tremendous* format to work in. However, the mechanical problems remain the same. The *main* problems were faced and solved by the optical department and stage. They included things like a lack of high speed capability and exaggerated shrinkage problems.

What did most of your work entail?

Generally in the *roto* department, we were producing individual film elements. A lot of that stuff was not incredibly precise; they were "garbage mattes." In many shots of the spaceships, most of the blue screen would be covered in order to minimize blue spill on the ships and white spill on the screen itself. Only the minimum area of the blue screen was visible in the photography of the miniatures. Our garbage mattes were drawn to opaque the peripheral areas of those shots. In addition to this, there were shots that had the problem of shadows on the blue screen, because in certain setups, the ships would be right up near the blue screen. There were shadows at times on the blue pylon ship supports. This situation called for occasional precise mattes.

I've been told that many of the ship interiors filmed in England had a lot of blue spill problems...

That was a little treat "arranged" for us by the English crew. My particular opinion is that a certain amount of spill is unavoidable. Rob Blalack was talking about how there shouldn't have been so much of it, but with shiny, curved surfaces and so on, there's an unavoidable minimum. Getting rid of those defects was one of our *big* problems in the rotoscope department. It took about three months to get those shots corrected.

Let's take an example of this. Say there is a shot of an actor in the cockpit and some blue reflections spill onto his profile. If an uncorrected composite is made, there would be a hole in his cheekbone. Exactly how do you go about eliminating this?

The main idea was to separate the blue spill from the blue screen. What we did was make a matte which left the blue screen visible but masked out all the pesky areas of blue spill. This element was used with the photographic mattes to print the cockpit exterior. All too often, the spill would be right up against the edge of an object, in contact with the blue screen area. We had to go in and create *precision edges*, do the work of the blue screen, so to speak. In many cases, we found it necessary to compromise where it was impractical to produce these precision edges. What we were left with in some of the composites are star backgrounds coming through certain areas, but I don't notice them when I see the movie. Lucky for us that most of those shots are in the fastest, most distracting parts of the film. I got mighty familiar with those cockpits! The standards were set very high, not only by George Lucas but by Rob Blalack. Robbie, of course, didn't want any bad composites going out.

What was your working situation like?

When I first started out at ILM, which was about nine months after the organization was formed, George Lucas and Gary Kurtz were nowhere to be seen! They were

in England taking care of the really expensive sets and also on the African shooting. So we were kind of working in the dark for a while. I spent about four or five months doing animated explosions which were conceivably going to be in the film and were not. The third-hand feedback I got didn't inform me that animation really wasn't what they wanted, and all that stuff wound up on the floor.

What percentage of your shots were scrapped?

All that early animation, and quite a bit of effort. For example, there was one perennial animated explosion shot, *Shot Number 215*. We did about fifteen or twenty different versions of that. We were just trying to make it work. At that time, George Lucas was just starting to be available and there wasn't enough feedback, yet. It was a communications problem as much as anything else, and I think there may have been a little ego involved, too. We had already shot about fifteen or twenty miniature ship explosions, and they weren't working by themselves. They needed something else. A second unit was eventually set up and new explosions were filmed. But we worked on animated enhancements for a long time in an effort to make the ILM explosions satisfy the director.

*Do you think that animated explosions would really look convincing, especially in a film like *STAR WARS*?*

No, not yet. Realism and believability are essential to the drama. What we termed "explosion enhancement" amounted to more, in hindsight, like an attempt to make complete explosions. I look forward to doing some animated explosions in the proper context.

*I wonder how the other studios felt when they saw the fantastic visuals in *STAR WARS*?*

This might be an apocryphal tale, but I will repeat it anyway. I had heard that the people at Disney's—in fact, virtually the whole studio—went to see *STAR WARS*. They were planning to do a science fiction film about a mile-long spaceship that might get sucked into a black hole. The story is that they decided to drop their space epic when they saw *STAR WARS*. They were saying to each other, "Where did all these people come from? There's a gang of people out there who did this impossible stuff! We've never heard of these guys!" It's a little eerie.

*With *roto* work in practically every effects shot, I'll bet you were wondering if *STAR WARS* would ever reach the stage of completion.*

Did you read the *National Enquirer* issue which included an article with comment by George Mather, our production supervisor? He mentioned the fact that for about six weeks, it really looked as though we might get the plug pulled on the picture! That was late in 1976. Hardly any shots were done. Millions of dollars had been spent, and we had something like \$30-40,000 a week in payroll. Production just wasn't there! *Can you imagine *STAR WARS* not being finished?* I think that near catastrophe is a fantastically romantic aspect of the whole story, though it wasn't exactly pleasant at that time. Working at ILM was almost like being in a soap opera, with all the trials and tribulations we went through! In retrospect, it makes *STAR WARS* all the more remarkable. ■

DENNIS MUREN

1st Effects Cameraman

Dennis Muren is one of the most productive of the new generation of effects cameramen working in Hollywood today. Born in 1946, he started experimenting with 8mm movie camera effects while still in grade school, including stop-motion dinosaurs, miniature rocketships, earthquakes and giant people. He attended college in Los Angeles. During that time, he produced and directed the original 16mm feature film version of *EQUINOX*, conceived as a showcase for his visual effects and those of stop-motion animator David Allen. The film was a mixed bag of illusions including an animated "devil man" and a fifteen foot giant achieved by Dennis' clever use of perspective photography. Shot on weekends and during summer vacations, it took two years to complete, and was subsequently sold to producer Jack H. Harris, who shot additional scenes and released a hybrid version which can be seen occasionally on television.

After that, Dennis directed and photographed two educational films for Charles Cahill on the universe, a fine blueprint for his later work on *STAR WARS*. The films contained 120 scenes of planets, galaxies, and supernovas all using miniatures and artwork. He soon landed a position at Cascade Pictures of California as an effects cameraman and shot such popular commercials as Green Giant, Nice & Soft, Mr. Clean, and the Pillsbury Doughboy spots. In July of 1971, he began work on *FLESH GORDON*. During the course of an entire year, Dennis provided about 120 special effects shots, elements, superimpositions and mattes, and was responsible for 90% of the photography of the high speed miniatures constructed by Greg Jein, including the various spacecraft seen in the film. He also assisted Jim Danforth around that time on *WILLY WONKA AND THE CHOCOLATE FACTORY*.

On *STAR WARS*, Dennis worked from George Lucas' concepts, set up and photographed about half of the starship scenes, and concentrated mostly on the Death Star and dogfight sequences. "I was very pleased when asked to work on *STAR WARS* for two reasons. First, I had a great deal of respect for George Lucas, his films, his integrity, and his visual sense. Second, John Dykstra's approach to handling this enormous job by using custom industrial-electronic equipment was extremely challenging."

Immediately following the completion of *STAR WARS*, Dennis went to work on

INTERVIEW BY PAUL MANDELL

CLOSE ENCOUNTERS OF THE THIRD KIND, spending five months with Douglas Trumbull and Steven Spielberg on the effects photography of the Mothership sequence which ends the film. He is presently working on the special effects for the forthcoming television pilot **GALACTICA** under the supervision of John Dykstra. Jim Danforth eagerly awaits his services on **TIMEGATE**, where he will be photographing a sequence involving flying rocket men, utilizing perspective photography and the techniques pioneered by Howard and Theodore Lydecker, something that Dennis has always been particularly fond of.

How did you get involved in the effects photography for STAR WARS?

I met John Dykstra during 1974-75 when he was working at Future General for Doug Trumbull. At the time I was looking for work there but nothing was available for me. I soon heard from Jim Danforth and Bill Taylor that George Lucas was doing **STAR WARS**. They inquired about doing the work and found George sort of non-responsive. George had his own way of operating which just was not what Jim and Bill had in mind. So nothing came of that. From hearing what they had to say I sort of got turned off by it. A number of other people had contacted the offices about doing the effects work and they didn't even get their calls returned. It seemed like somewhere off in the middle of nowhere, George Lucas was going to make this film, including the effects. He didn't seem too open to new thoughts or suggestions.

I later heard that John Dykstra had gotten the job. I contacted John and showed him an educational film I made for Charles Cahill on the Universe. That had about one hundred twenty outer space shots in it, all shot in 16mm with a Bolex. But I didn't hear from John for about ten months. I thought that **STAR WARS** had folded. All of a sudden I got a call from him asking me to go to work, and that was it. John knew I had been working at Cascade Pictures as an animator and an effects cameraman. A lot of people came around with a reel under their arm but they never held down a job. So John felt I was competent and that I wasn't going to buckle under pressure. I wound up working with Richard Edlund who was already at Industrial Light and Magic as first effects cameraman. Richard is very technically oriented and had a lot to do with setting up the shop and getting the equipment functioning.

There are a lot of young people in the credits, names familiar to most fans.

The average age at ILM must've been about 27. I think the oldest person was Don Trumbull, Doug's dad, who was the mechanical designer for much of the custom equipment.

You functioned as second cameraman. How much work did you actually do?

I shot about half of the effects shots and probably a bigger percentage of the backgrounds, which were relatively easy to shoot. Foregrounds are the more difficult thing. By foregrounds I mean starships and by backgrounds I mean stars, the Death Star, and matted paintings.

What was your working arrangement with Richard Edlund?

The way it was set up when I started, I was to shoot backgrounds using our limited, older Technirama camera, and Richard

was to shoot foregrounds using our custom built, flexible "Dykstraflex" camera. As the project evolved and we got closer to our completion date, we found that the foregrounds were taking too much camera time to shoot. It required a second camera team to photograph them using the main camera at night. So for about five months I was shooting ships at night and Richard was shooting in the day. This was to get the film done before our release date of May 25. The backgrounds were worked in whenever we could. Some were shot by Ken Ralston and Dave Berry.

Would you explain the Dykstraflex camera system and why you used it instead of conventional techniques?

At the start of the project, George Lucas had some very specific ideas about the starship shots. He had already edited the sequence using actual black and white battle footage and scenes from other airplane movies, and what he wanted us to do was to duplicate each of those shots using X-wings, Y-wings, or T.I.E. ships. Our shots would be cut right into his sequences and replace the black and white footage as they were shot. What he had done was pre-shoot and pre-edit the sequence in a sense—a storyboard on film. Using the black and white footage as a guide, we knew the shot length, ship motions, and direction of travel for each shot. But how do you do this duplication? Most of the cuts were between 20-50 frames long, with these very specific motions of the ships.

One approach is stop-motion—the models can be moved to exact positions between frames. But John Dykstra insisted the ships be blurred when traveling fast just as they were in the old battle footage. This has always been a problem in stop-motion; each frame is clearly defined, not blurred due to speed.

With the help of a half dozen engineers and electronics men, a camera was built that is essentially a motorized horizontal animation stand, except that it shoots and runs continuously and is much more flexible than any animation stand. The camera is at the end of a boom arm with eight feet of vertical travel. The boom arm is on a 40 foot track for horizontal travel. The camera can also pan, tilt, and roll. Each of these axes or motions is operated by a motor. By varying the speed of each motor, with a rheostat or joystick as well called it, we can vary a camera motion, such as starting a boom-up, increasing a camera tilt, and so forth. The real trick is being able to remember each of these motor moves so that we could repeat moves exactly. This is where the computer comes in. It's not really a computer, but more of a memory system for the motors. Richard Edlund and I would regulate the speed and direction on these motors ourselves. We call this "programming" a shot. It might take one minute to program what will be a one-second shot. But that one minute gives us time to follow the black and white footage and move the starships to specific points. The memory allows us to see the action again and again before we shoot it, modifying it and making it better. Later, we photograph the shot running continuously through the motions, shooting at perhaps a two-second exposure per frame at f22 for depth of field. This continuous motion gives the ships natural blurs on the frame.

These blurs caused enormous problems

for the optical department. Rob Blalack was in charge of the composite work; veteran Bill Rineholt helped set him up. Rob studied the best techniques of blue screen in town and saw to it that we wouldn't get matte lines and all the traditional stuff that seems inherent in blue screen composite shots. They did a great job. Blurred edges had never been done before to this extent in blue screen.

Even though the old battle footage started out as our guide, we followed it for only half the shots. George and his wife were constantly recutting the film to make it better and better, and in doing so, new or updated shots were being added all the time.

How exactly did you film the miniature ships in the dogfight scenes?

It was up to Richard and myself to set up the miniature. We would go to the case where the ships were, pull out whatever ship was necessary for the shot, place it on the blue pylon brace in front of the blue screen, and set up the camera in such a way that by tilting it at one angle and programming certain axes, we would end up with something that looked like what the storyboard called for. What made the shots work was setting up this stuff to look as though the ships were actually flying along and not that the camera was racing towards the ship or that a certain motor was stopping at one point and starting at another, which was exactly what was happening!

Was everything motorized?

Except for explosion shots, everything was motorized. There were a few background shots where the camera was pushed by hand, but in most of the ship scenes, everything was on motors. This meant that the camera would track and the boom arm would go up and down and perhaps do eight other motions, each with its own motor, to produce one ship shot.

There is a point I should make regarding an advantage in using the "Dykstraflex" motion control system in effects camera work. Say you were doing a shot the way the Lydeckers did in the Republic serials—flying a ship down wires and shooting it at high speed. You'd have a couple of guys on the lights, a few camera people, two or three guys rigging the wires, and one guy checking the ship in case the wires break. You'd probably have at least twelve people on that crew. If you suddenly got an inspiration to change the shot somewhat, it would be a major undertaking. There would be lots of people on the payroll who would just have to stop while wires are re-rigged and the camera is repositioned and the set is relit and it's really a big deal. But because the Dykstraflex system can be run literally by one person, it's no big deal to change a shot. All it means is that you'd just go over the program you already did and run the ship from right to left instead of from left to right, and possibly reprogram two other axes. So the system allows you to have a very relaxed climate in which to create the shots instead of a hectic one that often happens with a large crew. It enables you to work in an atmosphere that generates out of a very tiny crew to do shots that formerly would have required the work of a dozen or more people. Changing camera placement or a lighting arrangement for a better shot with the Dykstraflex is a relatively easy matter.

The peel-offs were spectacular. How

were they done?

The peel-off was one of the shots I had. Each ship was shot on a separate piece of film to be combined later optically. But the movements of each ship using motors were difficult to do. A slight mistake in a speed change with any motor would cause the ship to jerk funny in an unnatural way. This was a constant problem. We thought this out and tried to come up with something that was easier than it actually looked. Mainly, the technique I employed was using as few of the motors as possible and "crabbing" the camera instead, as we call it. Crabbing is moving in on an object at such an angle that the object travels off towards the side of the frame instead of right toward the camera. You don't have to motorize the camera to make the ships move in that way because the natural motion of the ships as the camera moves in is going to be the kind of "drift" you want. Mainly I tried to avoid using the camera pan and tilt motors because they caused the most problems, and by crabbing the camera I eliminated the need for those motors which smoothed out the shot. For instance, the camera would move in and the ship would start to roll at a certain point. It was also motorized. The ship would then move to one side and start to fall away. At the same time, the camera boom arm would go up, making it appear as though the ship was diving down. When you run all these motions together and photograph it, you get something that looks like a peel-off. Then it was done three more times for each of the four ships.

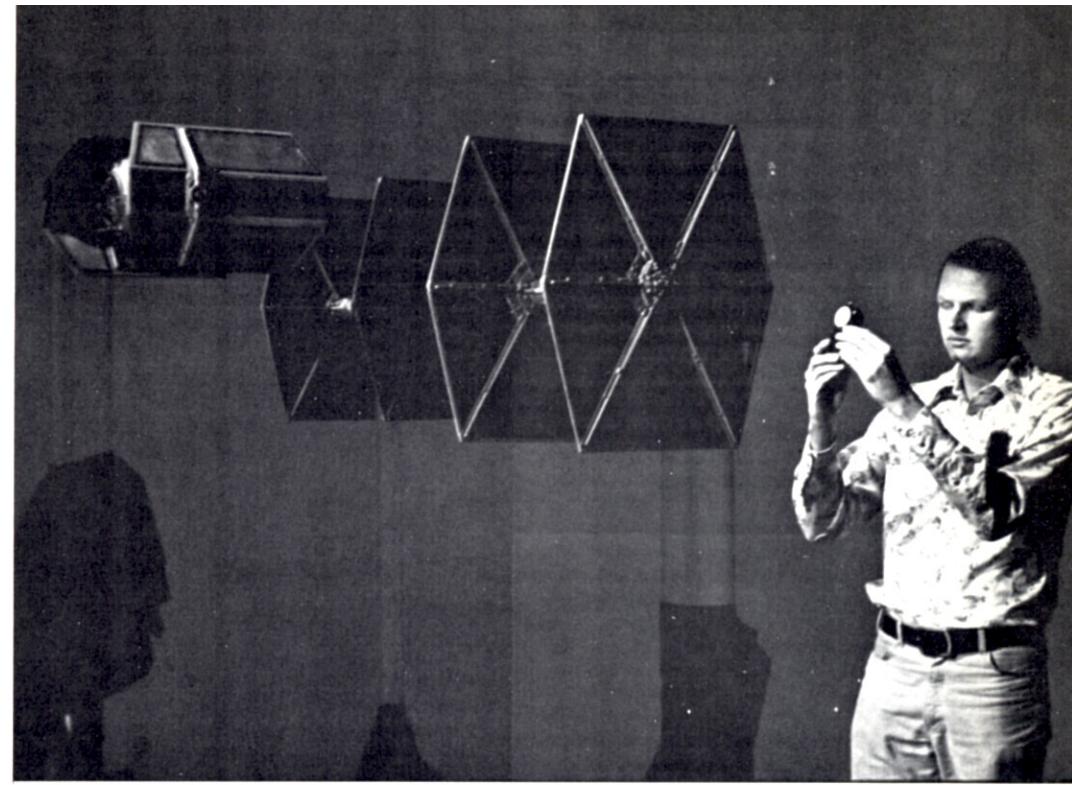
Do you mean that in all those peel-off shots only one ship was filmed at a time?

Oh, yes. Within that shot, everything was shot on a different piece of film. So there were several exposures, each photographed against the blue screen. Each ship had to move differently, which meant it had to be on a different program and set up at a different perspective. So we actually did four programs on that shot. In addition, there were two Y-wings in the background. Each one of those was shot separately. With the star background, you're talking about seven separate pieces of film to be combined. Then it was up to the optical department to place the proper ships in front of each other without getting any matte lines. You could see the difficulty on our end to make sure that all the shots we were filming over a period of days were ultimately going to line up and look as though the ships were actually following one another.

Another important trick was to give the illusion that there were separate pilots flying each ship. That's why I didn't get into repeating the same ship-motion program four times in the peel-off. The main idea was to get the feeling of the personality of the pilots. That's where my stop-motion background really helped. For instance, there was a scene of the ships approaching the Death Star and diving down into the surface. I had two ships flying off to the left while a third ship flies off more toward the right. There's a different personality flying that third ship. I tried to do that at every opportunity.

Was blue screen used exclusively?

Right. The idea that John Dykstra and Richard Edlund had when they got this job was to set up the shots in an assembly-line situation. Since there were so many differ-



2nd effects cameraman Dennis Muren checks lighting on a blue screen set-up.

ent effects shots, they felt that only one technique should be used instead of mixing in, say, front and rear projection or sodium screen. As long as all of the shots were going to be done in that way, we were going to take the time to do the best blue screen job ever.

The composites are flawless. I couldn't pick up a matte line anywhere.

There were a number of tricks we used on show that helped out. In scenes where people and flesh tones were involved, a great deal of time was spent to eliminate any matte lines and what we call "blue spill," blue light that spilled off the screen onto the helmets and faces of the guys in the cockpits. Some of the stuff that was shot in England had a lot of blue spill on it. Had we gone ahead and left it without rotoscoping, you would've seen through their helmets and the sides of their faces. So a lot of work was done in the rotoscoping department as well.

Many of us do not have a clear understanding of the principle involved in the blue screen process.

Well, you have to be able to generate two pieces of film. One is a perfect silhouette of the object to be matted. This is used to black out the background where the object will be. The second film is of the object clearly lit, but against black. Basically, this is double-exposed into the blacked out area of the background. In color cinematography, one way to do this is to shoot the foreground object against blue. The matte is created by first making a black-and-white positive print with blue light and bi-packing this with the camera negative and printing this with red light onto a high-contrast black-and-white film. The blue printing light and the red printing light in each case render the blue background clear, while the positive image of the object is filled in by the negative, rendering the object opaque. Any blue on the foreground object would be clear and transparent, so we had to make sure that none of the ships had blue markings and that none of the pi-

lots wore blue of any kind. Now, to create a film of the foreground illuminated against a black background, we make a negative of the matte which comes out as a clear shape against black. This is laid over a color positive print of the foreground object against blue. The clear area of the matte allows the printing in of the foreground object while the black matte area blocks out the blue screen, rendering it black. To bring this all together as a composite shot, we bi-pack the matte with a positive print of the background scene and print this onto unexposed film, then rewind the now partially exposed film, and onto it print a foreground positive print bi-packed with the negative of the matte. And believe me, none of this is any easier than it sounds. I've simplified everything in explaining it!

Could you explain the use of the "blue pylons" on which the miniature ships were mounted for photography, and how they differ from an ordinary blue brace?

Ordinarily you would have to light the blue brace. The blue pylon had its own internal light. It was actually neon wrapped with a strong plastic material and coated with the exact blue pigment of the translucent blue screen. In shooting blue screen, it is important to have as little red and green in the blue color as possible. When you're dealing with blue paint, it's going to contaminate the red and green layers of the camera film in addition to the blue. This contamination increases the chance of matte lines. You can cut that down a lot by having a backlit bluescreen. In STAR WARS, we used a translucent backlit blue screen which was the best we possibly could get. The blue pylon brace transmitted the identical color of the backing. So by eliminating the chance of red and green contamination, we helped eliminate the chance of getting a "glow" or matte line.

Blue screen always had its drawbacks in the past. It makes you wonder why some of the veteran Hollywood technicians never went out of their way to do the kind of job

with it that was done on *STAR WARS*.

Other people could come up with quality provided that they're interested enough to do it and have the smarts to know what is needed to get that kind of quality. Many people in town who have been doing this kind of work for thirty or forty years accept it as an imperfect technique. What we had on *STAR WARS* was a bunch of people who were just jumping into it fresh, almost like revolutionaries, eager to do the best job ever done. In addition, a lot of the groundwork had been done in the past decade by Peter Vlahos, Bill Taylor, Frank VanDerVeer and others. *STAR WARS* was the perfect showcase for blue screen.

*Why did the blue screen process become so obvious in a mammoth production like *THE TEN COMMANDMENTS* which was also shot in VistaVision?*

The development of mylar film had a lot to do with today's improvements because it doesn't shrink. There is actual shrinkage of the film when it is developed in making the mattes. They no longer fit the original negative and you can get a blue or a black line around the matted object. Shooting the original negative is one thing; making mattes on different pieces of film for the composite work is another. There are so many things that go on. Something that Rob Blalack pointed out to me was the lens between the two printer heads. If that lens isn't perfect, you can get rid of a traveling matte line in the center of the screen but as an object moves over to one side you can begin to pick it up. Another thing is that you try not to build up contrast in the mattes. You generate all your mattes off the original negative and make them all exactly the same size, if possible, and put them back together so that they'll all fit right into each other. If you keep the contrast down in the mattes, the image doesn't necessarily increase or shrink. All it takes is the time to do it, quality control, and the right equipment. Bill Taylor has been doing some incredible blue screen work at Universal with Al Whitlock. Some of the stuff in *THE HINDENBURG* was absolutely sensational.

*I thought the most dramatic visual in *STAR WARS* was the one of the camera dipping down into the trench of the Death Star and travelling along on a seemingly infinite route. It was sort of analogous to the Star Gate trip in 2001. How was that one done?*

We started out by using Richard Edlund's shot of the approach down into the trench, slightly above it and looking down into it. He dove the camera down into it, all this motion controlled equipment running at slow speed. He played the action as though it was the point of view from the ship diving into the trench but he in fact was only starting it just barely outside the trench.

The trench itself was a miniature about fifty feet long and three feet high. At one end of it was a forced perspective painting which made it look like it went on forever. So what we had was an 84-frame cut within that trench.

How fast was the camera actually moving?

We were probably shooting at the rate of three inches a second. Anyhow, what I've described was the second half of the shot. The first half of the shot was a painting by Ralph McQuarrie. When we moved

on into the painting and it reached a certain point, what you actually saw was a photograph of the first frame of Richard's shot. We made a blow-up of it about seven inches square, placed that on a piece of masonite, and the artist extended that with a painting. That was the end point on the first part of the shot. The two were blended together by lining up relative moves. Richard shot his part of the shot first, so I had to match mine to look as though it was moving in the same direction as his. When a cut was made from one shot to the other, all the actions would flow. It was very difficult to shoot. A laser flash was inserted which blended the two cuts together. If you look at the shot closely, you might be able to see what happened. I was really pleased with that one and it seems to be the shot that has gotten the biggest response.

The laser sword fight was also a wonder. It looked too real to be an animation overlay—it almost seemed to glow like neon tubing.

In effect, it was essentially both. It wasn't tubing with light, though. They were actually holding simulated swords made out of front projection material. A light source near the camera shining onto the front projection material hopefully would bounce back brightly. However, it didn't quite work. So what George had to do was put an overlay of the glow on top of that through rotoscoping. That's how they got the different colors. I think the main thing you're seeing is the overlay. A diffusion effect was created by shooting the overlay through a fog filter.

What was the main problem with using the front projection material swords alone?

It looked too solid, I think. George Lucas wanted something more like energy, something that you wouldn't want to get close to. The image was so bright it was flaring the lens out. Perhaps if they had more time to work on it they could have gotten the desired effect right away, but the entire show was pretty much compromised because of the time factor.

How much contact did you have with George Lucas?

Once I started shooting ships, I saw him a lot. He'd come up with the shots he wanted and work out a schedule with John Dykstra and production supervisor George Mather. George Lucas would tell me the feelings he wanted out of the shots and I'd tell him what I wanted out of them, and he'd win! But seriously, George was very good on that. All we really did on *STAR WARS* was to put George Lucas' vision on film. It was his movie; he wanted energy and speed out of most of the shots. He wasn't going to have matte lines or stuff that was as boring to look at as MAROONED.

It looked like every other shot was an effects shot.

There were 360 composite effects shots made from 1000 separate elements, something on that order. Most of these 1000 elements we photographed in five months.

Another shot comes to mind. It looked like a cluster of white stars bursting into a nebula.

That was done with streak photography, by increasing the amount of streaked distance per frame. I originally did it as a test and they liked it and used the test! It wasn't done on the Dykstraflex but on the sec-

*Top: 2nd effects cameraman Dennis Muren takes a light-meter reading on the Death Star miniature. The model is a three-foot plexiglass sphere, painted a metallic gray by Ralph McQuarrie and Dave Jones to add detail. When the effect of lighting on the surface was desired, McQuarrie and Jones carefully etched away the paint job to allow an interior light source to show through. Bottom: An Imperial T.I.E. fighter attacks an X-wing as the battle to destroy the Death Star begins. Each of three moving ships in a shot such as this would be photographed separately using the Dykstraflex system and combined optically via the blue screen process. The ship miniatures are also stationary when photographed. The wildly gyrating action of the *STAR WARS* battle scenes is an illusion created by the movements of the versatile Dykstraflex camera and the ingenuity of the stage cameramen.*

ondary camera. I had a 14-foot track on it and the memory system could repeat moves. Technically it was something similar to the slit-scan process.

The stop-motion chess sequence was a nice surprise. How did that idea evolve?

I heard that George was going to do some additional shooting for the Cantina sequence, to shoot some more masks. So I spoke to Phil Tippett and Jon Berg and said that maybe they could make a presentation of some bizarre costumes and I could take it to George. They made up a few great sculptures about 6 inches high. George loved them and said, "Hey, there's another sequence in this film that you guys don't know about that involves a chess set. Why don't you make up a bunch of alien creatures and we'll put them on the chess board?" So it worked out both ways. Phil and Jon got to do some stop-motion and with Rick Baker got the job to do additional masks for the Cantina. I also photographed the chess sequence.

I noticed Peter Ellenshaw's son in the credits (Ellenshaw Sr. was a matte artist at Disney's). Did he do all of the matte paintings?

He did some. Ralph MacQuarrie did the rest.

Was the twin sun element a matte painting?

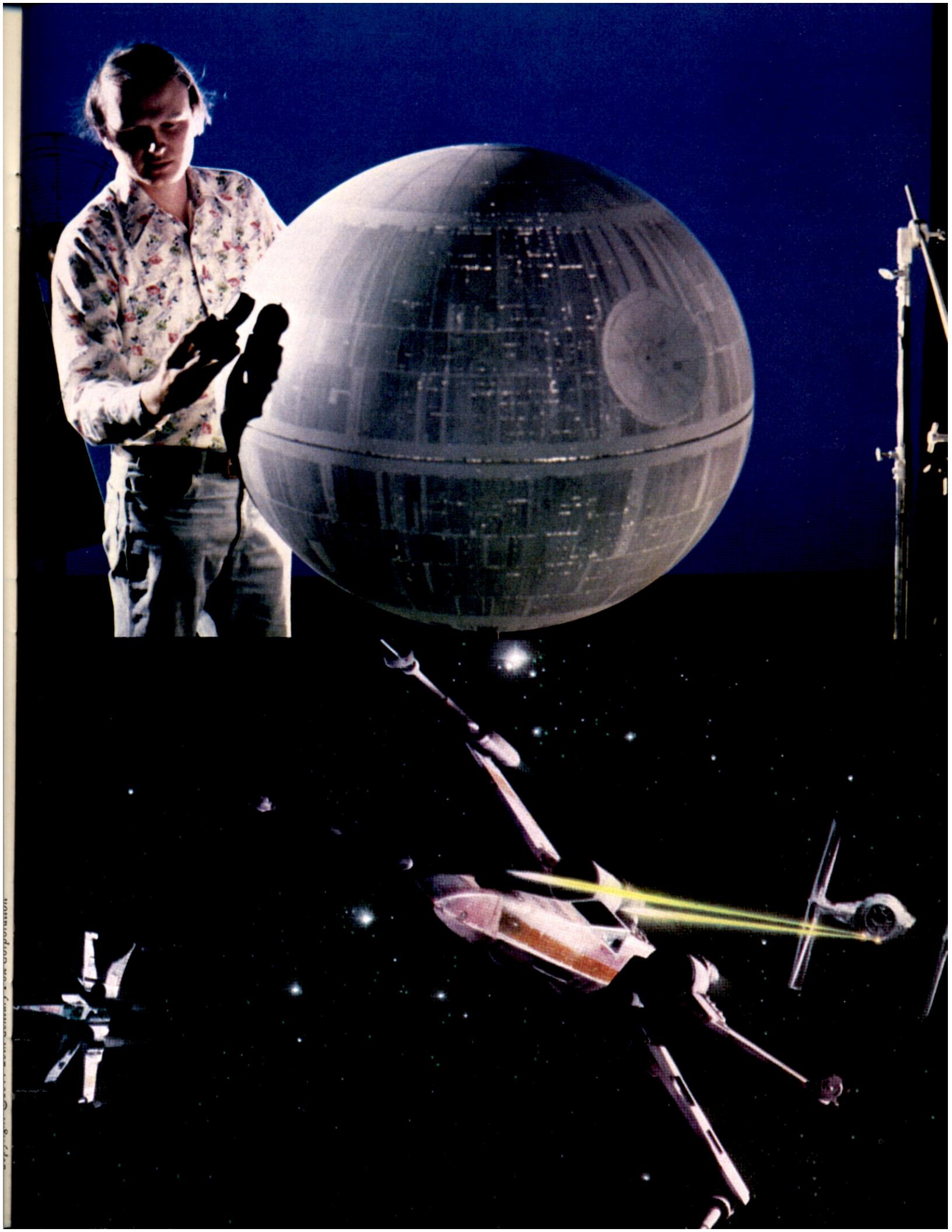
No, it was a freeze-frame of the real sun double-exposed.

*How did you like *STAR WARS*?*

I loved it. George has made something superior to everything else that's ever been done in this genre. Imagine, a classic fantasy-adventure film coming out in 1977 that's more creative and imaginative and popular than anything the major studios could turn out in 60 years of trying! We all feel honored to have worked on it. Really.

*Nothing seems impossible anymore in today's visual effects technology, and that seems to include perfection. Do you see *STAR WARS* as the ultimate effects film?*

I don't think any film has reached that point. *STAR WARS* II is in the works. I don't know how that's going to be but there's a lot of stuff that we wanted to do in this one which we couldn't get into it. I think *STAR WARS* could have looked more documentary-like, more as though you were traveling in a spaceship flying by looking at these things. I think it could have looked even sharper and more realistic. You should've seen people in the cockpits, more lens flares from the sun, more shots of the ships flying past the twin suns, stuff that we just couldn't get into. I'm hoping that it might happen on the next one.



KEN RALSTON

Assistant Effects Cameraman

Ken Ralston was brought into Industrial Light and Magic on a recommendation by Dennis Muren. His background in stop motion animation and miniatures made him an ideal choice to assist Dennis on the operation of the formidable Dykstraflex unit.

Born in Downey, California in 1953, Ken spent three months at Cal Arts but left rather quickly. "It was a nightmare. The last thing I was going to do there was learn anything." Through a fluke, he wound up collaborating with a friend named Glen Anderson on an ambitious 8mm effort entitled *THE BOUNDS OF IMAGINATION* that featured a lot of stop motion work. "It was essentially forty minutes of a guy imagining all sorts of things during an entire day, fantasizing about strange adventures." The film was soon shown to Phil Kellison at Cascade Pictures who liked it and put both of them to work on *ADVENTURES IN UNDERLAND*, an educational children's

INTERVIEW BY PAUL MANDELL

Paul Mandell is a film historian and stop motion animator living in New York City.

Assistant effects cameraman Ken Ralston with the Dykstraflex camera memory unit. In his hand is the "joystick" used for varying the camera motor speeds while "programming" a shot.

show containing seven minutes of animation. Also working on it was Laine Liska. Unfortunately, it never saw the light of day because of some apparent legal hassles. "That was my initiation into the professional side of this kind of work. Glen left, I stayed at Cascade, then spent that short time at Cal Arts, and came back to Cascade. I did an MD Tissue commercial utilizing characters derived from *ALICE IN WONDERLAND*. I worked at Sandler Tape and Film, and at Modern Film Effects doing a bit of title animation for a Charles Bronson film *FROM NOON TILL THREE*." A brief period of unemployment followed. Then came *STAR WARS*.

Ken was astounded by the Dykstraflex camera unit when he first saw it at ILM. "When I walked in on this thing and saw the memory system, I couldn't believe it. It was very strange work. Physically, the hardest part was the setup, rigging the ships, getting the blue screen just right and lighting it. I was basically manning the equipment, making sure that all the information was being recorded and programmed. There's so much you have to think about. It's exhausting just sitting there and keeping your mind active. If you forget just one little thing, the whole program will go wrong. Al Miller, who I believe has a degree in nuclear physics, was about the only guy around who could maintain the memory system. If anything went wrong, we'd scream for Al!"

Ken started off at ILM by shooting star backgrounds and matte paintings that were coming in at the time. Often, Dennis Muren would operate the joystick and record the speed of the ship miniatures while Ken would input the information into the memory. When certain scenes became too hectic for a two-man operation, as with the "armada" zooming in towards the Death Star, Dave Jones was called in from the model shop as a third man. Richard Edlund, of course, would be shooting on the day shift. At first Dave started out by checking the rigging on the blue pylons and the lighting, but he got to learn the "computer" by working with Ken. "Towards the end, I might be shooting a shot of a T.I.E. ship

while Dave would be helping Dennis shoot matte paintings and backgrounds. Then Dave would have to keep jumping from camera to camera to help both of us!"

Ken Ralston was in awe when he saw *STAR WARS* for the first time in a theatre. As both a technician and practitioner of special effects, Ken provided a candid and unique perspective on a film that has become a full-fledged social phenomenon. His comments follow:

"The scene was ILM, the time, late summer, 1976. Dennis Muren had gotten his position on *STAR WARS* a couple of months before I did. He had the script with him one day and we all went out to lunch. It was the first opportunity I had to look through the script. I would pick a page, put my finger down, and read it. I couldn't believe it! Every shot was complex. No matter what page I picked, there were elements that were incredibly difficult to do. Then I began to laugh. 'Oh man, this stuff is *impossible!*' Right then and there I realized something. Isolate just one area of *STAR WARS*, to do it good, to really do something *good*, was very hard. In the past, science fiction films like *THE THING* or *THE DAY THE EARTH STOOD STILL* had a very narrow technical area that had to be mastered, and the technicians who worked on them did very well. But *STAR WARS*, as I soon began to realize, was going to be immense! It's like the film we all would dream about writing but we wouldn't because it would be impossible to produce. I could see the problems mounting up. *Everything* would have to be good; everything would have to be done right. The miniatures are only one aspect, actually a small part of the film although everyone remembers them because they're so unusual and dynamic. But you've got all those endless suits, all those robots, all those aliens, all those sets, and all that design work! Everything in *STAR WARS* basically had to be done from scratch. There were no existing sets. There was so much to handle."

"When I saw the script, I loved the robots. I remember thinking, 'God, this is great.' Actually, the most boring part in the script is the technical descriptions of the battle sequences. Every scene seemed to read the same—you couldn't visualize what George had in mind. Then I would look at the old black-and-white footage. 'We've got to duplicate that? Oh boy!' I kept telling myself that 'it could be great.' We all agreed that it would just be fantastic to pull this off correctly. But if the film fell down in any one area, it would hurt the entire film immensely."

"Dennis and I saw five or ten minutes of the film cut together, the sequence where Peter Cushing blows up Alderaan. We looked at the whole reel, and I wasn't sure whether it was going to work. We knew everything was going to be dubbed over it, but all you could hear was this Scottish, muffled voice emanating from within the Darth Vader suit, a bunch of inaudible lines, with no sound effects, and with no visual effects cut in at that time. We didn't know what to say. Later, after Dennis and I left ILM, about two months before the premiere, we went back to the shop and looked at two gigantic visual effects reels that had been done. Believe it or not, I was unimpressed. Many shots had not been refined optically. Only about 5% of them seemed great. There were endless shots of



the cockpits with the backgrounds showing through. And I didn't know what it was, but something seemed to be *wrong*. It just didn't 'have it.' We were sitting next to each other and saying rather unemotionally, 'Mmmm, I don't know...'

"Now there was only one month left. Apparently, they killed themselves in the optical department trying to get those shots corrected. But we just sat there, kind of disillusioned. The matte lines around the ships roaring down the trench were very prominent and the color balance was off. We really didn't think there would be any time to correct it. There were also little jerks and pops that were showing up in the ships, countless things that had to be ironed out."

"Premiere day came. We were all assembled at the Academy Theatre. We had no idea what was going to happen. To kick it off, they ran an old Warner Bros 'Duck Dodger' cartoon, an old Chuck Jones one, and it was hilarious. So the mood was set. Then *STAR WARS* began. We were all sitting there, the lights went down, the 20th Century-Fox logo came on, and we still didn't know what it was going to look like. And then that *first shot* came on! We all sat with our mouths open and all you could hear throughout the audience was 'WOWWW!' It was just incredible. The opening shot and sound effects just plummeted us right into the picture. We weren't let down anywhere. We were enthralled by everything on the screen. When the battle scenes were about to happen, I thought of the script and wondered. Those were our scenes. It was so hard to be objective at that point. Dennis and I just kind of looked at each other with that unmistakable expression of 'Well, here it goes...'. We had no idea how all that stuff we shot was going to look. So far, we were delighted with the entire film, but we remembered what those uncorrected shots looked like and we just kind of sat tight. Then it all happened. It was *unbelievable*!"

"After the end titles rolled by, the lights came on. We were with a group of people we knew—Rick Baker, guys on the makeup crew, and several others. We all stood up and all we could do was stare at each other and say nothing but 'My God! What *was* that! It was *incredible*!' I have the habit of blowing up my reaction to a picture that I thought was good. I started to visualize how I would tell people about this, about how I would build it up. Fun, Romance, Adventure! Then, just for a second, I kind of held back. Excuses ran through my mind. 'Hey, I hope you're not expecting a heavy science fiction film. It's not a *CITIZEN KANE*. It's not *that*.' But no, I knew that I would just keep building it up because there was no way that I could diminish it! It was one of the greatest experiences that ever happened to me in a movie theatre."

"Afterwards, we all had a get-together, at 'Dr. Munchies,' I think it was. Everyone was just dumbfounded. We talked about it for a long time, and after all the rhapsodizing was over, we knew that it all boiled down to one guy, and that was George Lucas. With all the people who worked on it and had something to do with it, it all had to go through George. The conclusion was unanimous: *STAR WARS* has got something that nobody but George Lucas could have given it."

ROBERT BLALACK

Composite Optical Photography

"When we stopped production we were at our best. Yet in the last three months, when essentially everything was worked out, very refined, the shots that we did at that point were maybe only 40% of the final show, so the remaining 60% don't represent our best efforts."

Robert Blalack became interested in filmmaking after first working in theatre in the late sixties. He operated lights, did special lighting, and became involved in experimental light shows around 1968. "In the theatre," he explained, "we spent an incredible amount of time putting a performance together, and it would only last for a few nights or a week, and then be gone. I wanted to be able to record that and transmit it to a larger audience."

In 1970 he attended Cal Arts and studied filmmaking, focusing his attention on special optical effects. "I got into optical effects," says Blalack, "partly as an extension of my interest in experimental filmmaking, and partly because I wanted to develop a craft that I could use to survive when I got out of school. When I looked at Hollywood, I saw that most people wanted to direct, some wanted to shoot and edit and do sound, but at that time there didn't seem to be that many people who were interested in doing effects."

Blalack began his own optical effects company, called Praxis, and was hired by John Dykstra to set-up the optical effects department at Industrial Light and Magic for *STAR WARS*. As a result of that work, Blalack is now forming a partnership with James Shourt, an electronics designer who built special equipment for the ILM operation. Their company, Motion Pictures, Inc., will offer a state-of-the-art computerized camera system, capable of repeatable multi-axis moves as well as manual operation. A special feature of the system will allow for multi-axis programming simultaneously rather than one axis at a time by setting-up coordinates in space to define the camera move desired. The company will also offer

INTERVIEW BY MICK GARRIS

Mick Garris currently works at the Star Wars Corp, and proved to be a valuable liaison during the compilation of "Making *STAR WARS*." He has been a regular contributor since Vol 6 No 1, and is the lead vocalist and songwriter for Horsefeathers, a Hollywood-based cinematic rock band.



Robert Blalack.

two in-house, high-speed optical printers for composite work.

*How did you become involved in the composite work for *STAR WARS*?*

It goes back to June 1975, when John Dykstra called up and asked if I wanted to put together the optical department. He described the problems, and that there were 350 shots involved, in VistaVision. He explained that we would have to build equipment, that we had about eighteen months to do it in, and that there was going to be a lot of blue backing. That sounded good, like it was going to be an interesting project, and I said okay.

I got together the equipment for the project, brought in my own printer, did the VistaVision conversion, which in optical printing is a difficult end in itself. As you try to get higher resolution on a larger piece of film, it becomes more and more difficult. It's very easy to get high resolution in 16mm, on that size image frame. When you go up to double-frame 35mm, you encounter lens problems and illumination problems. So we spent a good four months sorting that problem out, building matte housings, prototyping, changing the equipment, testing field lenses...

Were you involved in developing the Dykstraflex camera?

No, I wasn't involved in that. The Dykstraflex is the tracking camera. That's the stage camera, specifically a mobile camera platform, while the optical effects were generally a one-to-one copy situation. That is a whole other set of problems. The people involved in that would be Richard Edlund, John Dykstra, and Don Trumbull. What I did was get the printers together optically, which was a problem, working with people to get them together mechanically, developing the techniques that we used, then supervising the production of the optics.

In looking back on the optical effects in the film, what do you think worked best?

Towards the end of the project our techniques were getting very good. The film doesn't have all our best efforts in it.

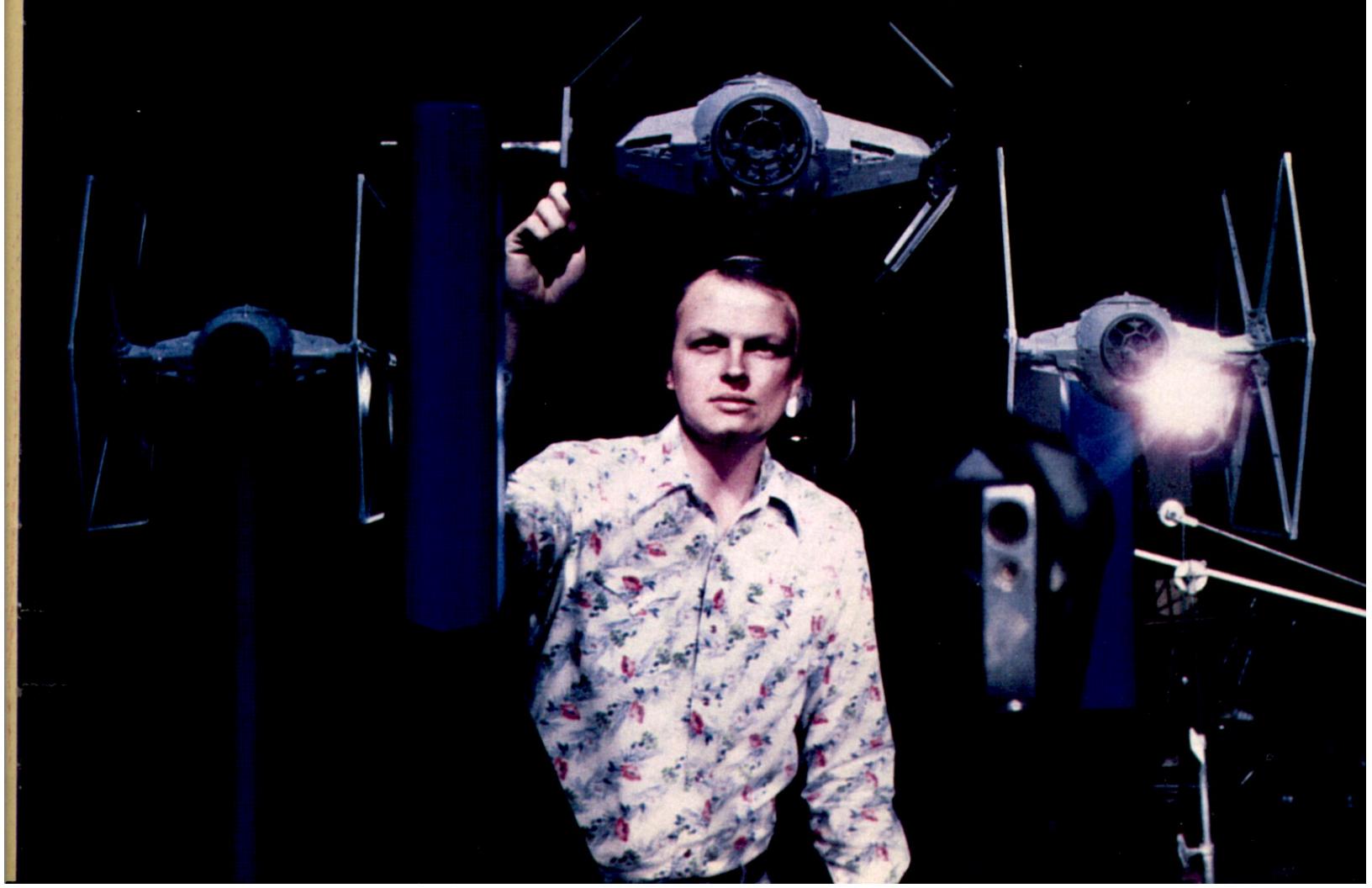
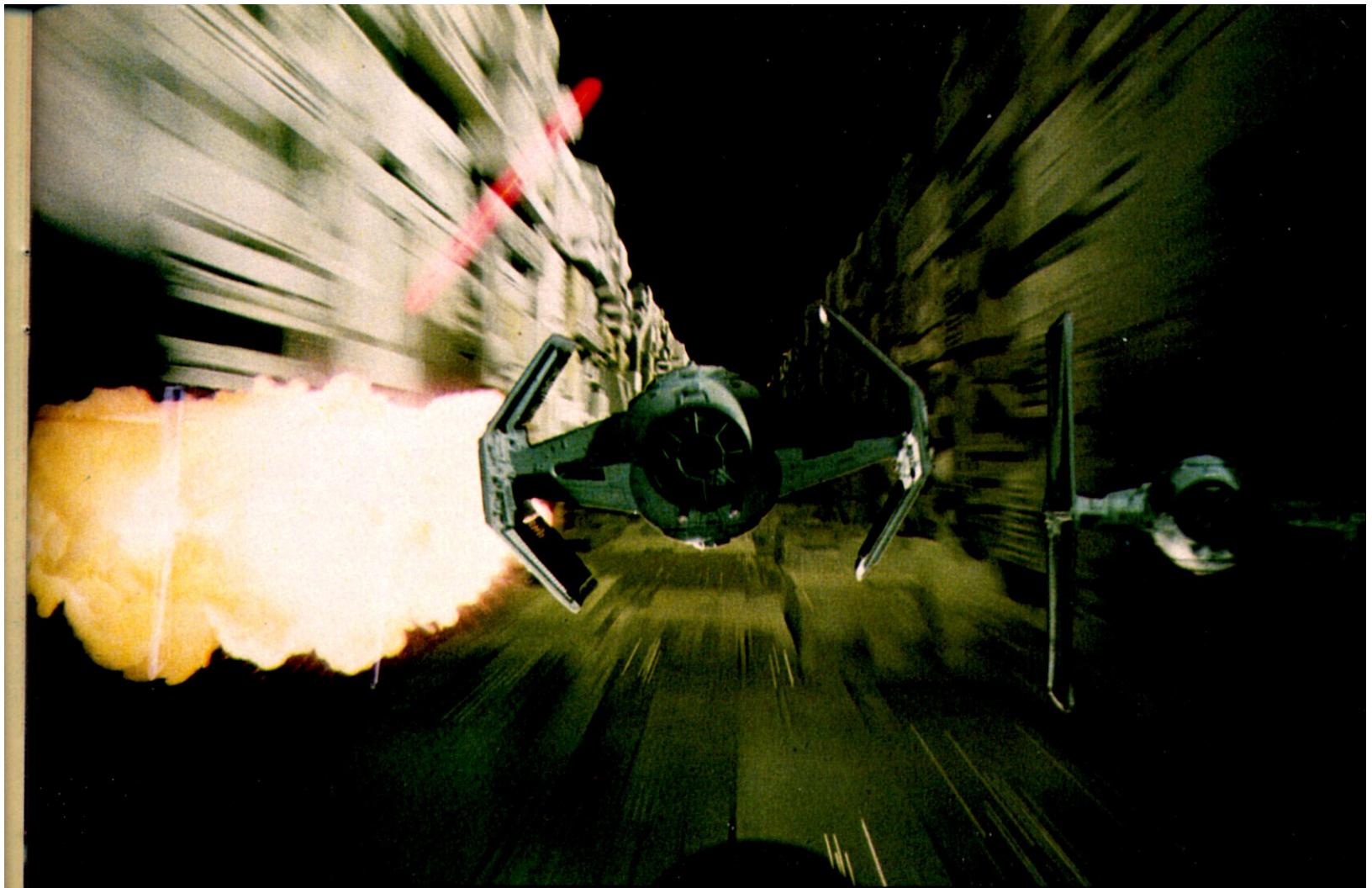
Death Star Trench

"The real quality of the dog-fight track is visceral. You don't remember anything in particular about it. It's moving so fast. There's so much action."

—Richard Edlund



Top Right: Darth Vader and his Wingmen on the tail of Luke's X-wing in the Death Star Trench, as Han Solo comes to the rescue and blasts one of Vader's Wingmen. Composite optical photography expert Robert Blalack, interviewed on the preceding and following pages, details the complicated procedure involved in combing eight elements on 38 pieces of film to achieve this effect. The explosion, created by Joe Viskocil, is filmed separately and superimposed over the left-hand Wingman. Viskocil is interviewed on page 87. *Bottom Right:* 2nd Effects Camerman Dennis Muren sets up Vader's ship and the T.I.E. Fighter Wingmen for blue screen photography for a Trench shot similar to the above. Dennis Muren is interviewed on page 21. *Top Left:* Vader's ship and the T.I.E. Fighter Wingmen in formation rigged for blue screen photography. The ships are mounted vertically on their sides to film a sequence where the ships zoom in at a vertical angle rotating towards the horizontal as they speed toward the Trench and their fateful encounter. The ships themselves do not move. The effect of their rotation in formation is achieved by the motion of the versatile Dykstraflex camera during filming. *Bottom Left:* Effects designer and illustrator Joe Johnston works on a forced perspective painting to be placed at the end of the Trench miniature to give the illusion that its finite length extends to infinity. The paintings were done over 30" x 40" photographic blowups of the Trench miniature itself, done at four different angles to represent different heights of camera placement within the Trench. Johnston is interviewed on page 77. [Photo © 1977 20th Century Fox Corp.]



"I think it would be a mistake to think of STAR WARS as the ultimate in special effects. I think it would unjustly deny the efforts of past special effects workers. It's the ultimate space film. . . maybe."

—Robert Blalack

A lot of the optics were pushed through. There are about ten shots that I feel work really well, and a lot of them have to do with or happen around the Death Star, when the ships are coming in, when you first see them over the Death Star. A couple of these are optically perfect from my point of view. I'm completely satisfied with those.

What makes you cringe when you see it?

I think some of the shots of the pilots don't work too well, probably about 20% of them, when they're in the trench. There are matte problems. There are some of the optics that, when I look at them, I would not want to have kept in. I'd have to look at the film to point them out. Overall, I'm very satisfied with how the optical effects turned out, given the difficulties we had to surmount.

Often we see a blue line around a matted object, or there will be cancellation of part of the image so that you can see through it. Why does this happen?

If you see through—we had that problem occasionally—we call it "blue spill," and other people call it "wraparound." This essentially is where the object you're photographing against the blue screen, picks up, usually through reflection if it's got a shiny part on its surface, the blue screen and reflects it into the camera lens. So when you look at your daily, you've got your object, you've got your blue screen, correctly exposed, and you've got a patch of blue, perhaps right in the middle of the object. If it's in the middle of the object, there's no problem. We simply hand rotoscope it out. If you don't hand rotoscope it, then that blue reflection is in the middle of the object and prints the background just like the blue screen.

How did you avoid blue spill?

We avoided it by moving the object further away from the screen when we could. It's a question of how far away from the screen you can get your object. The further you can get your screen from the object the better off you are, like 20 or 30 feet. You don't get the same amount of reflection. We'd bring in flats and cut down on the amount of screen we were using so we didn't have a lot of blue light spilling onto the object. And when that didn't work, we'd turn it over to the animation department and have them do a hand-animated matte. They did a lot of those, because we couldn't always avoid blue spill.

The most problematic blue spill is when your screen is bleeding into the edge of your object. Then you have to create the edge of the object at that point. We had some shots with actors which had spill on their helmets. It would come right around the side of the helmet. There was no definition point there, so the animators had to rotoscope the edge of the helmet.

How long did it take to complete the optical effects?

It took roughly twenty-two months to finish them. And that includes all the pre-

paration time. It took us six months just to get the machinery together. It took us another ten months to get to the point where everything was just humming along, coordinating what the stage was doing and that what we were doing was what Lucas wanted. When we stopped production, we were at our best. Yet in the last three months, when essentially everything was worked out, very refined, the shots that we did at that point were maybe only 40% of the final show, so the remaining 60% don't represent our best efforts.

The effects were being done in Van Nuys, and the live action was mostly being shot in England. Were they being done concurrently?

We were starting into production while they were shooting in Tunisia. We had just finished assembling the stage equipment and the optical equipment and they were filming in Tunisia simultaneously. We were working on delivering some front projection plates to be used in England in April 1976.

Was there a communications problem?

There's always a communications problem in film with a large group of people, particularly technical people. There could have been more communication in terms of what they needed in England. That requires a lot of commitment on the part of the technicians and the director to communicate. That's a very rare thing to do in the midst of all your production problems.

How closely did Lucas work with you?

He would see the finished optics. I'd present them to him every week or every other week and he'd critique them. He'd accept certain ones and he'd turn back others. My role was largely to finish work that other people had done as realistically as possible. It was fairly cut-and-dried in terms of what Lucas gave me as feedback. He either liked it or he didn't. A few shots had optical renderings and there was some communication there, but what I did was largely cut-and-dried.

Can we take the shot of Darth Vader's ship and T.I.E. fighter companions roaring down the Death Star trench and detail its history in terms of optical printing?

The elements of that shot were, working from the back forwards: 1) the stars, which were shot on one piece of film. They represented the motion of the trench shot, the camera pulling down the trench. The camera has a zoom motion to it as it moves down the trench, and the stars reflect every motion the camera makes except the zoom; 2) and 3) the trench plus its matte, which wasn't shot blue screen. That was shot double-pass. They shot the trench lit the way they wanted, then they flooded it with white light so there were essentially very few shadows, and shot it again with the same program to make its matte. We need the matte to hold the stars out; 4) Darth Vader and his right-hand wingman, which is not the one that gets blown up. They were on one piece of film. Those two ships were shot blue screen; 5) the wingman on the left-hand side, who explodes at a certain point. He was shot on another piece of film with blue backing. 6) and 7) the lasers that Han Solo shoots. There are two series of lasers. One set went in front of the left-hand wingman, and one set went behind the ship; 8) the final element is the explosion of the left-hand wingman, which is matted on top of the ship itself. In this

case, the ship didn't actually explode. It was a matted explosion.

We have the stars, the trench, its matte, Darth Vader and his right-hand wingman, the left-hand wingman, the explosion of the left-hand wingman, and two sets of lasers—that's eight elements. The trench, the ships—three ships on two pieces of film—and the explosion all went through color separation. The lasers were printed in the color print, and the stars were printed from a "high con." If we add up the number of different film pieces required to achieve the composite, there are three for the trench, nine for each of the three blue screen elements to get them to work, two for the lasers, one for the stars, and five mattes, a total of 38 pieces of film.

We generated what we call compound mattes, which are multiple mattes. We choose the first element that is going to be printed, the element which will be foremost in the scene—imagine a series of layers which would recede backward—and we make a matte that contains everything but that first element. We then print the first element using this matte. This would be Darth Vader and his right-hand wingman. We put a protective matte over that exposure, then print the second element, which in this case would be the ship that's exploding. We put a protective matte over that and then print the explosion, putting a protective matte on top of that after we print it. That leaves us with the three ships in a black, unexposed field of film. We next print the trench behind all three of these, covering that with another protective matte which includes the ships and the trench. This allows us to print the stars and the lasers. A matte is required for the laser which goes behind the left-hand wingman.

How many generations are involved?

It was only one generation. I'd say all but a few of our shots were one generation removed. In a few instances we composited them at eight perf and reduced them to four perf. Since we started with a larger negative size we were able to get them to intercut very well. Making separations would be half a generation, then printing back would be the other half.

STAR WARS has gained the reputation as the "ultimate" special effects film. What do you think makes it unique?

I think it would be a mistake to think of it as the ultimate in special effects. I think it would unjustly deny the efforts of past special effects workers. There's a particular kind of effects it did a lot of, but we never touched water problems, flood problems, or fire problems on a major scale. We did explosions, but we didn't deal with fire as a problem of miniature scale, like a burning ship. So there are those categories of effects that we didn't deal with. In terms of quantity it has a lot of optics, travelling matte effects, and blue screen effects. It has a lot of difficult miniature photography. That's the Dykstraflex camera, which is what I would say is one of the unique features, the camera platform and the fact that it was a total system for the camera. That, and using an optical printer, and a blue backing approach for doing everything. That really makes it a record-breaking achievement. But if you say it's the ultimate, you're forgetting what's been done in the past. It's the ultimate space film, maybe.

DAVE PROWSE

Darth Vader

"Lucas told me that my voice would be processed and metalicized. That Rolling Stone interview was a lot of nonsense. Lucas is reported as saying that he knew my voice wouldn't be used. I thought I would be called in to loop the dialogue."

"I love playing monsters," says Dave Prowse, who was interviewed in Vol 2 No 4 about his role as the monster in Hammer's **FRANKENSTEIN AND THE MONSTER FROM HELL**. Prowse also played the monster in Hammer's earlier **HORROR OF FRANKENSTEIN**. Born in Bristol in 1934, Prowse earned the title of British Heavyweight Lifting Champion for three years running, 1962-1964, and retired undefeated. The notoriety of the weightlifting title led to work in the film business, where his muscled 6 foot 7 inch frame was used for a variety of heavies. Prowse has worked with director Stanley Kubrick, and just completed scenes for director Russ Meyer in a film about the British punk-rock group, the Sex Pistols.

How did you get the part of Darth Vader in STAR WARS?

George Lucas got in touch with my agent just before Christmas 1975 and I met him after the holiday. He told me a bit about the story and offered me either the Chewbacca part or the Darth Vader part. I asked him the difference between the two characters, apart from the fact that they were in costume from head to foot, and he said that one was a lovable teddy-bear type and the other was the villain. In my experience everyone remembers the villain, and Darth Vader sounded me to a T. Lucas realized I could hold my own with people like Alec Guinness, so I didn't have to do any tests.

Does it bother you that your voice wasn't used in the final film?

Yes, it does. I was concerned that James Earl Jones' voice was used, because I was playing the villain. Although I was aware that my West Country accented voice wouldn't be used as it is, George told me

that it would be processed and metalicized. Early on in the making of the film no one had any idea what Darth Vader was—a human, robot or even why he was in the mask. I thought I would be called in to loop the dialogue, but perhaps for economy reasons I wasn't, as at that stage no one realized the film would turn out to be the biggest grosser ever. Possibly they couldn't justify the expense of sending for me.

That *Rolling Stone* interview was a lot of nonsense. First, Lucas is reported as saying that he knew my voice wouldn't be used. Second, that I only act for fun. I don't. I'm very serious about it. Third, that I'm very rich as I own a chain of Gyms! I'm not rich. I own one gym and an interest in an exercise consultancy in Harrods, a large department store in London, and that is it. I'm sure that story was circulated because I swapped my car at one stage for a friend's Rolls Royce and who did I bump into the first day I drove it but George, Gary Kurtz and the *Rolling Stone* interviewer who must have jumped to conclusions.

Was the Darth Vader outfit uncomfortable to wear?

It was very hot. The trousers were quilted leather with a seam all the way down on top of which I wore four layers of canvas and leather, then a breastplate and two cloaks, one of which was left off in the end. At first my head turned around in the mask without it moving, so they padded it out with foam rubber. In the swordfight we could only do a little at a time as I had to have the helmet off to unsweat. Breathing was okay, but vision was a problem. I couldn't see ten feet in front of me.

Can you tell us more about the swordfight?

You know the special effects secrets, but the problem was they broke. You had to be careful not to hit the two swords together and clash. We rehearsed for three weeks and even before the film had started shooting Alec and I were briefed about it by the choreographer. That's the beauty of the scene because it doesn't look at all like it was choreographed. I knocked Alec flying at one stage. In the scene where I strike

him his clothes were on a wire frame that collapsed on impact.

How much help did Lucas give you with the part?

I never really had much in the way of direction. In all my parts I can say that, except those for director Terence Fisher. Lucas told me to be myself once I was in the suit, so I became as villainous as I possibly could. That's why I think *Frankenstein* movies are approached wrongly. Everybody has this Karloff fixation of the monster's lumbering gentleness, but that's totally wrong. The audience should be relieved when the film is over that they won't meet him in a dark alleyway. He should be as nasty as possible. I worked on the Darth Vader walk. I wanted people to run behind me for effect.

What about the sequel?

I've been asked to do the next two. Fortunately for me, Darth Vader has become the most memorable character in the film. He's the cult figure. I get the most extraordinary amount of fan mail. I got rather concerned when I wasn't invited on the publicity tour in the States and they dressed people up as the characters. If they can do that they could get other people for the film. My publicity agent thinks it would be a good idea if I went to the States myself under the banner "Darth Vader Invades America," which I think is a great plan. I've been in the business for 12 years now and I've done twenty movies, and now I'm beginning to click. I would be a fool not to capitalize on it. I am in a bad negotiating position though as no one has seen my face.

You've appeared in a host of fantasy films. You must like doing them.

Yes, especially as people like you take so much interest in them and me. I always see the films I'm involved in. I love *STAR WARS*. It's Errol Flynn all over again. Lucas made a film I can take my kids to without trying to arrange separate showings as most of my films are [British] X-rated. With big screen and Dolby sound the film has everything. I've seen it three times. The last time was at the Arnhem Film Festival where it was only 35mm and flat sound, and I fell asleep!

INTERVIEW BY MIKE CHILDS & ALAN JONES

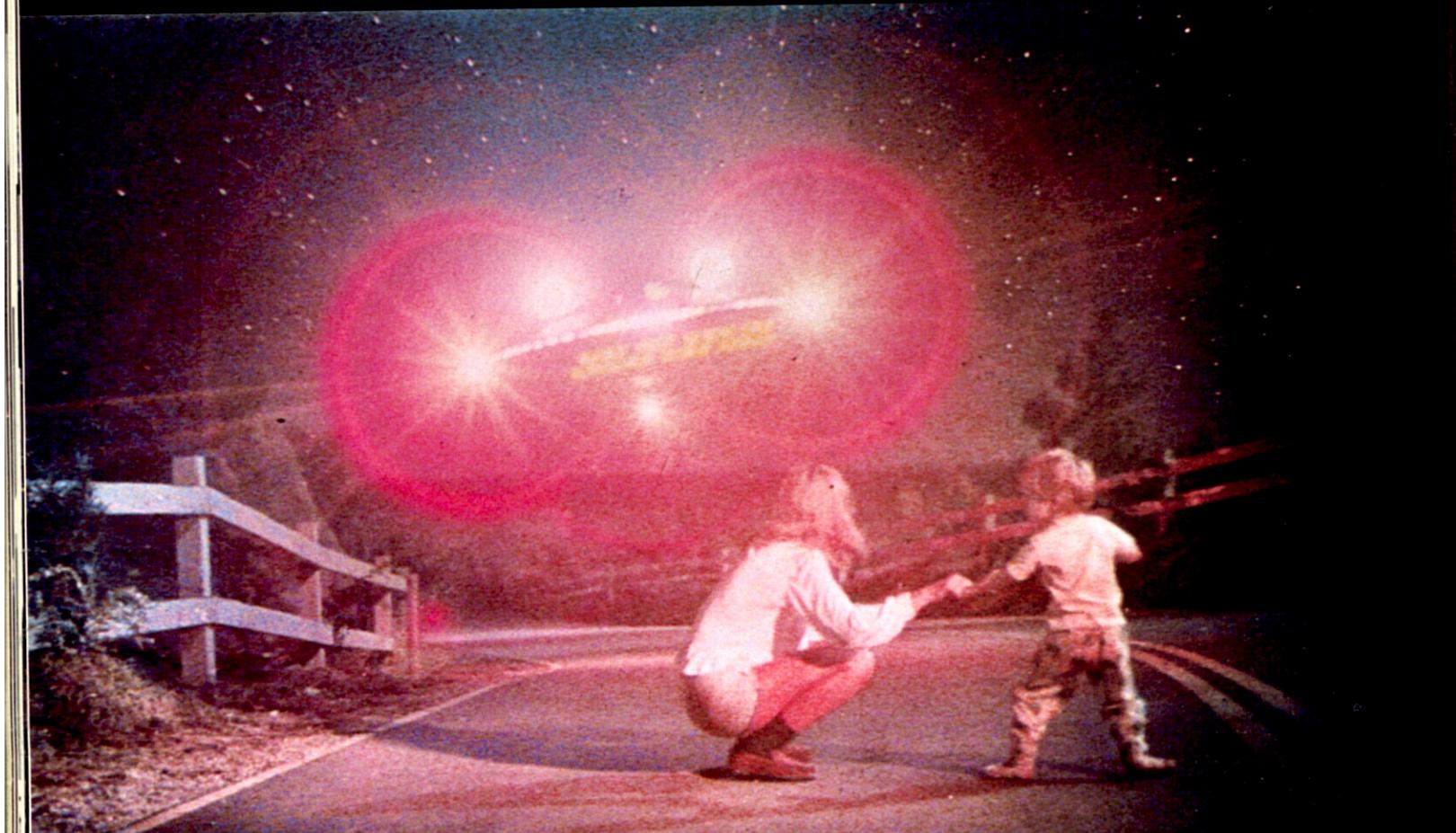
Mike Childs and Alan Jones are London-based correspondents and regular contributors.

Dave Prowse sans his Darth Vader helmet with Alec Guinness between takes of their laser sword-fight on the Death Star.





CLOSE ENCOUNTERS OF THE THIRD KIND



STEVEN SPIELBERG

Interviewed by Robert Villard

This was the year of *STAR WARS*—wasn't it? Certainly 1977 will be remembered for George Lucas' fast-paced fantasy spectacular, but the long-awaited release of Steve Spielberg's \$18 million UFO "science fantasy speculation" *CLOSE ENCOUNTERS OF THE THIRD KIND* may inspire not only the same type of popular phenomenon as *STAR WARS* enjoyed, it may also prove a catalyst in the scientific community to explore and resolve the ages-old question of UFO sightings throughout the world.

The long, laborious, and expensive birth of Spielberg's film has been extensively chronicled in the press. *STAR WARS* triumphantly emerged seemingly from nowhere—though I'm sure Lucas would dis-

ten agreements to the no-comment policy of the film unit. As testimony to the unprecedented security measures imposed upon *CLOSE ENCOUNTERS*, Spielberg was, himself, denied entrance to the shooting location on one occasion when he failed to produce the required Security Clearance Badge.

Time and *Newsweek* both approached the *CLOSE ENCOUNTERS* office for possible cover stories on the film, and both prestigious magazines were turned down when they stipulated a need for advance behind-the-scenes and special effects stills to illustrate the proposed articles.

Ultimately, press previews of the finished film were staged in November in both Los Angeles and New York, followed by extravagant press conferences which included, as participants, not only writer/director Steven Spielberg, but producers Michael and Julia Phillips (*THE STING*, *TAXI DRIVER*), stars Melinda Dillon (*BOUND FOR GLORY*), Terri Garr (*OH, GOD!* and *YOUNG FRANKENSTEIN*), and four-year old charmer Cary Guffey, composer John

tually a Disney true-life adventure on the Water Buffalo!)

After the *STAR WARS* phenomenon, there was a tendency for many journalists to tie *CLOSE ENCOUNTERS* to its space fantasy predecessor. At the press conference, Spielberg emphasized, "*CLOSE ENCOUNTERS* got off the ground a year before *STAR WARS* was conceived. We were just slower than they were. It was never really a race. Of course, George [Lucas] and I are friends and we were both aware that one of our two films had to come out first. At one point, we were coming out in Spring and George was going to pull back for Christmas. And then we pushed back to Christmas, George came out in Spring. So, really, both films were made independent of one another and the only comparing that went on during production was George and I complaining to one another about what a *bitch* it is to shoot special effects and how we're never going to do it again!"

Commenting further on *CLOSE ENCOUNTERS*' relationship with *STAR*

Top: Small UFOs put on a dazzling light-show for the observers at Devil's Tower. Bottom: Melinda Dillon and Cary Guffey's close encounter of the second kind. The close collaboration between director Steven Spielberg and visual effects creator Douglas Trumbull results in a new high for special effects.



Above: The *CLOSE ENCOUNTERS* press conference: composer John Williams (left), Terri Garr, Melinda Dillon, Cary Guffey, producer Michael Phillips, director Steven Spielberg, visual effects creator Douglas Trumbull, producer Julia Phillips, and astronomer J. Allen Hynek. (Photo by Robert Villard)

pute that latter contention—to be enthusiastically embraced by the media as a Second Coming for the No Message/Entertainment Film. *CLOSE ENCOUNTERS OF THE THIRD KIND*, on the other hand, had to virtually keep the press away with a whip for more than two years, and an aftermath of that "silence" is the markedly hostile reaction of many journalists to the film now that it has opened.

Newspaper and magazine writers around the country fought fruitlessly throughout filming and the extensive post-production of *CLOSE ENCOUNTERS* to extract anything beyond the company-issued publicity releases. No one was allowed on the set. No interviews were permitted with either cast or crew members who, in fact, signed writ-

Williams (*JAWS*, *STAR WARS*), special effects coordinator Douglas Trumbull (*2001: A SPACE ODYSSEY*, *SILENT RUNNING*) and UFO authority Dr. J. Allen Hynek, author of *The UFO Experience: A Scientific Inquiry*.

Obviously, the *CLOSE ENCOUNTERS* company was as interested in courting the press upon the film's release as it was in "stonewalling" the press during the film's difficult gestation period. Any "hangover" negative attitudes would most properly be aimed at the filmmakers and not the film itself which seems certain to be a blockbuster of incredible proportions, and deservedly so.

(A lot of press people were distressed by the *Time* scoop review which appeared in the November 7th issue, before the press preview. Producer Julia Phillips adamantly denied any collusion with *Time*, and Spielberg explained that Frank Rich somehow got wind of the top-secret Texas sneak preview and flew there, kibbutzing an unsuspecting gentleman out of his pre-arranged ticket by informing him the sneak was ac-

WARS, Spielberg noted, "A lot of people ran to *THE DEEP* thinking they were seeing *JAWS II*. Our movie is so many light years different from *STAR WARS*. One of the encouraging things during the Texas preview was that out of the 1400 written responses from the audience, only 20 even compared it to the movie. It didn't occur to the others. So I'm encouraged that *CLOSE ENCOUNTERS* is a completely original movie that will stand on its own for years. Julia [Phillips] has always referred to *STAR WARS* as the best trailer *CLOSE ENCOUNTERS* could possibly have."

Lucas' reaction to *CLOSE ENCOUNTERS*? "He really flipped out. I was happy for that," Spielberg beamed.

Spielberg was preparing *JAWS* and editing *SUGARLAND EXPRESS* when he wrote the first 25 pages of his script for *CLOSE ENCOUNTERS*. "It sprang from being curious about the stars and space travel and wanting to get off the planet—and having a semi-unhappy childhood and looking for escape," was his explanation. "I love science fiction but I never intended

Interviewed by Dan Scapperotti, page 36

DOUGLAS TRUMBULL

"Of all the tens of thousands of UFO reports, none of them are hostile. In my heart, I wanted our Encounter to be peaceful."

—Steven Spielberg

this movie to be a *sci-fier*. I wanted this film to speak a kind of speculative reality."

Spielberg acknowledged that without the incredible success of his previous film, *JAWS*, *CLOSE ENCOUNTERS* would still be a treatment gathering dust in his files. "I would have had to wait until I had a smash, because I think Hollywood was very closed off to this kind of a picture, because science fiction doesn't make any money. There have only been really four or five breakthrough films, and dozens, maybe hundreds, that didn't break through. I think *FORBIDDEN PLANET*, *DESTINATION MOON*, *2001*, *STAR WARS* and *WAR OF THE WORLDS* made money, and most of the others did not. My feeling was that I would make a picture like this someday, but I needed *JAWS* or something like *JAWS* to allow someone to say 'Here—take \$18 million, go make a movie!'"

As to the eventual involvement of noted UFO authority Dr. Hynek, Spielberg explained, "Dr. Hynek one day was sitting around and picked up the newspaper and read about a movie company in Hollywood using his title, *CLOSE ENCOUNTERS OF THE THIRD KIND*, and he wrote me a kind of *snappy* letter! That phrase was coined in his book, *The UFO Experience*. That's how we first met—by mail!"

Does Spielberg himself believe we are being monitored by extraterrestrials? "I'm not personally convinced until I have a UFO experience myself. I'm convinced that something's going on that's baffling people all over the world. And I think it's worth millions of scientific dollars to try to find out what the hell's going on. But I've always been of that philosophy that I've got to have a one-on-one before I can sign a

Steven Spielberg.



paper. I believe the government is covering something up. Because of this Freedom of Information Act, Project Bluebook was declassified. I don't know how many priceless CIA documents that really either confirm or disprove UFOs haven't been affected by the Freedom of Information Act. Jimmy Carter, whether or not you know this, had two UFO experiences four or five years ago. One of his campaign promises was that he was going to get to the bottom of the UFO dilemma in this country, and I'm still waiting for him to pay off on that one!"

Special effects wizard Douglas Trumbull very nearly went unasked for his enormous contributions which predominate the dazzling last forty minutes of *CLOSE ENCOUNTERS*. "About a year before Doug came onto the film," Spielberg recalled, "the script was being written and I was sitting down with a sketch artist named George Jensen trying to put down these impossible ideas on paper in color and the next problem was, how do I put this on film? I really know very little about special effects. I know a lot more now than I did three or four years ago! But then I really only knew the ABCs of special effects and I didn't know that much about realizing them. I went to Doug reluctantly—because I felt Doug wouldn't want to do this. He has been directing and he had other projects."

Trumbull, of course, was interested. "One of my very strong feelings about working on *CLOSE ENCOUNTERS*," said Trumbull, "was that Steven was really set on breaking some new ground and trying to put onto film images or illusions that I felt were of interest to me. I had an opportunity to work on *STAR WARS* and rejected that because it was, in my opinion, more of the same from where I was coming from. I had spent a lot of time shooting spaceships and planets and stars and I was rather bored with it. I think that *CLOSE ENCOUNTERS* was a unique opportunity to do something new, and it also fitted with a lot of projects I was working on anyway with 70mm film."

Spielberg, who is credited in the film for "Visual Effects Concepts," explained his half-solid, half-transparent execution of the spacecraft: "I wanted to do that because I feel that it's more than just nuts and bolts. That there's something possibly inter-dimensional about them. People who have UFO experiences don't describe rivets and bulkheads. They don't describe the bottom moving this way and the top moving that way. They really describe something *dazzling*, sort of acetylene bright lights, on some sort of a solid structure, and they can't see because the lights are so bright."

Concerning the "dazzling" red light discernable on the back of the alien ship, Spielberg laughed, "That was the little red flag in the back of a truck when the two-by-fours hang out too far. That was just part of freaking out one day and saying, 'Give that sucker a tail light!'"

At one point, Spielberg was rumored to have abandoned his footage of the Aliens. "That was very early that I thought about maybe not showing anything," he stated. "I loved *2001*, but I wanted to see something at that point, I wanted Stanley to—I wanted something to materialize. And I couldn't avoid, after this experience, showing something. It was a dilemma for a couple of months. I really didn't know

what I was going to do with the extraterrestrial. So I finally took a deep breath and did what is there."

He went through about 10 designs before arriving at the final version. "They sort of evolved. Like from preta-human to humanoid—went the whole transition. Always short, though. One thing that I was intending in that sequence was to show that there was a very strong and workable mixing of the races from wherever they came from."

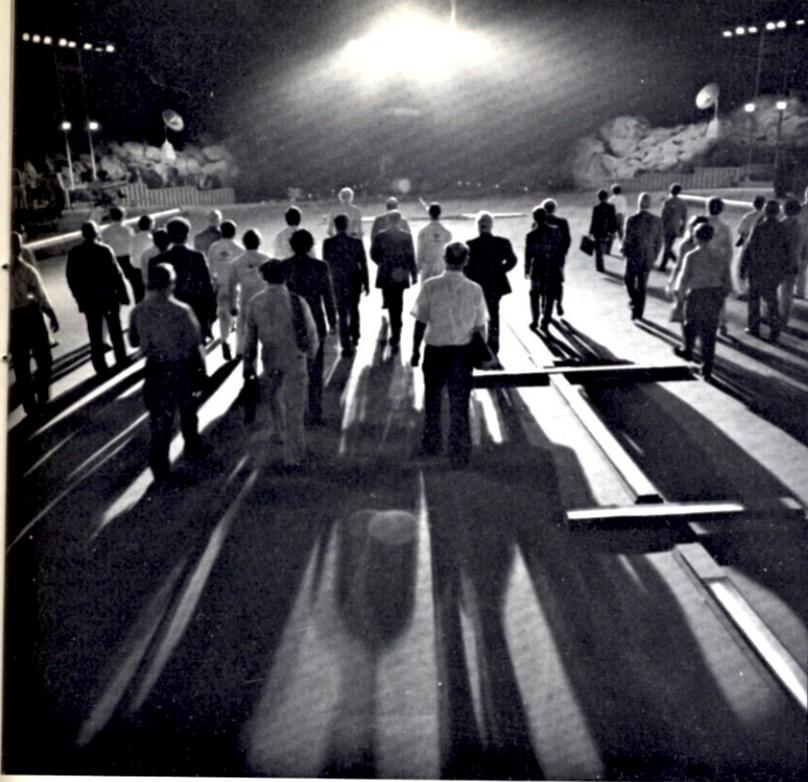
Vilmos Zsigmond (*DELIVERANCE*, *OBSESSION*, *SUGARLAND EXPRESS*) received credit as director of photography, but five other top cinematographers also had their names appended to the production credits, "...because I kept shooting the movie!" Spielberg explained. "I kept adding scenes. Bill [Fraker] wasn't available and John Alonzo was. Then John, too, said he wasn't available, and [Laszlo] Kovacs was. Kovacs did a lot of stuff in the crazy house. And John did a few pick-up shots of Cary. And they all work alike! It's strange—they all have a similar style, which is why I hired them. Except for Fraker, who I think was much different. He has a harder key light...it's much more European. They all looked at the film and they had to match. They looked at the scenes coming after and before, before they shot anything, so they could match the film with the lighting."

Though Spielberg's one "encounter" while on location proved to be a tremendous let-down when it turned out to be an Echo satellite, he did have one story to tell about something extraordinary that he *didn't* see. While working in Jefferson, Texas, as he unknowingly checked into a reputedly haunted hotel!

"I kept seeing things out of the corner of my eye! Everyone else felt the same way, so we packed our bags and got out of there in about ten minutes! Have you ever stood there and you think you see something, and you turn and there's nothing there? Well, that was happening every three or four seconds—and it was freaking me out in the hotel. It was midnight and there was nobody in the hotel but me and two production people, and we all felt this *thing*. At midnight we went back to the car, we apologized—'We're not going to stay.' The nearest Holiday Inn is 15 miles away. We get in the car. We start the engine and the ignition is dead! The engine won't start! So we had to wake somebody up at the gas station and he hot-wired the car for us and we got out of there!"

Francois Truffaut, the famous French "new wave" director, surprisingly accepted a role (written especially for him by Spielberg) as a scientist dedicated to get to the bottom of the UFO mystery in *CLOSE ENCOUNTERS*. "I was intimidated by him, quite frankly," Spielberg recalled. "Here's Francois Truffaut running around Wyoming, and I wanted to talk about all of his old films and he wanted to talk about the part! He was pretty much the one who drew from me the courage to turn around and direct him."

"One of the interesting things he did the first day—I couldn't quite get my point across to him in English, nor through his French translator, and so he asked me to stand right next to the lens behind the camera and he would watch my face, and I would play this and he would imitate every



Spielberg's benevolent encounter. Left: Technicians at the Devil's Tower landing zone marvel at the UFO light-show. This is how a UFO looks prior to the addition of Doug Trumbull's optical effects. Right: Lacombe (Francois Truffaut) watches returning earthmen descend from the open ramp of the alien Mothership.

facial move. And the next day when I saw the daily I realized that *I am no actor!*"

Spielberg said Truffaut made no comment as to the differences in American filmmaking from the European methods, "...but I can tell you that in the time it took me to make this movie, Truffaut wrote a novel, two screenplays, cut a film and shot a movie!"

In CLOSE ENCOUNTERS, one important sequence takes place in India. Spielberg has been challenged as to the significance of that sequence, which he staunchly defends: "For me, the sequence was the first major clue to the 'sky tones.' The people there were much more receptive and open-minded, in the Buddhist way, to accept something they heard at night—these five notes—and it got the entire mysterious sub-plot project off the ground. I felt that in India the people are closer to the earth and each other and the sky, and I just felt it would be a lot more probable to do it in India than to do it somewhere in Teaneck, New Jersey.

"Should something like this occur," he emphasized, "there will be no 'Take me to your leader.' It's going to be much more complicated than that. It's going to be a combination of telepathy and some sort of a universal language, which is mathematics or music."

Questioned as to the resemblance of the Devil's Tower mountain, used as a key to the UFO mystery in CLOSE ENCOUNTERS, to Kubrick's famous monolith in 2001, Spielberg protested, "It wasn't intentional at all. As a matter of fact, on the sixth day of shooting at the Devil's Tower in Wyoming, I was waiting for the sun to go down and I suddenly saw the mountain

draped in flat light and I said, 'Oh, God, I wonder who's going to step up and ask me that question when this movie comes out!' It wasn't intentional. The screenplay described a mountain—not a specific mountain in my first draft. But I needed a place for the movie to wind up, so I chose out of all the western states, Wyoming. I don't know why. And then later, when I was out there with the location manager, Joe O'Har was trying to find an eye-popping location for the mountain symbol. It just so happened that the best rock formation, the most unusual visually, was the Devil's Tower in Wyoming."

At the end of CLOSE ENCOUNTERS, it is implied that many "disappeared" people throughout history were, in fact, taken aboard the UFO and "frozen" in time (Amelia Earhart for one). "It's Einstein's theory, but there's nothing in UFO reports to suggest it," Spielberg noted. "That was sort of my imagination, or my philosophy, more than anything I read. I would also like to see what happens when the 22-year old pilot knocks on the door, and his children are grown and they have kids and their kids have kids. Which is like what happened with Viet Nam, when they came back and knocked on the door and their wives had re-married.

"It's my hope that Richard Dreyfuss would be returned. My hope is that everyone would be returned with partial knowledge. I'd like to sit in the debriefing chamber with the hundred people who came out and just listen to them coming down from the experience! I would love to spend an hour with them, and I'm sure Dreyfuss would come down in a few years and he'll spend an hour with somebody, and he'll be debriefed and he'll go back looking for [his wife] Ronnie." Spielberg paused and then added, "If he's smart, he'll get a divorce!"

There were a few minor changes—read deletions—before CLOSE ENCOUNTERS came to its present form, the most widely noted of which was the dropping of the Walt Disney tune, "When You Wish Upon



A Star" as the closing music. Says Spielberg: "It was changed after the preview of the film in Dallas. We felt the music, although it was a nice comment, seemed to have the effect to make a comment in reverse—that everything up until the last 30 minutes was a fantasy. I made the change because I asked a question of the audience—and the response was somewhat 50-50; the people who liked it didn't *love* it—they liked it; and the people who didn't like it were *adamant!* Having seen the film both ways, take my word for it, it works better without the song."

One scene was cut from the film where three helicopters intercept Dreyfuss on his journey to Wyoming. "He's standing there and the cops are surrounding him and taking pictures of him and asking questions. And then, of course, the next thing that happens is the men in white suits jump out of the Econoline Van."

In the interests of pacing, that scene was scrapped, as was a later sequence when it was decided that Dreyfuss would enter the Alien ship. "When they take Dreyfuss into another room and prepare him and he comes out wearing a jump suit—a lot 'off camera' is to be assumed. I shot several moments where he is given a release to sign. He signs his own 'Death Warrant'—because he's leaving our own astronomy, the man says, he could be considered technically dead, and he's asked to sign a lot of forms. He signs one form after the other," Spielberg laughed. "But that really interrupted the feeling at the end of the movie."

As to the overall thrust and meaning of his film, Spielberg characterized his concept of extraterrestrials this way: "I really felt that anyone smart enough to get here—to want to come here, and to want to 'hang out' for 2000 years—well, this sort of proves itself. Nobody zapped us with a cosmic laser beam. I really wanted this to be a benevolent exchange. Of all the tens of thousands of UFO reports, none of them are hostile. In my heart, I wanted our Encounter to be peaceful."

DOUGLAS TRUMBULL

"I am a filmmaker, first, who has an interest and expertise in special effects, second. The director must more fully understand the technical process involved in special effects in order to integrate them properly into the film as a whole."

Douglas Trumbull is a young, energetic and knowledgeable filmmaker. He began making short films in the early sixties, one of which, *TO THE MOON AND BEYOND*, was produced for the New York World's Fair in 1964. His introduction to theatrical feature film production was an assignment for the special photographic effects on the monumental *2001: A SPACE ODYSSEY*. Trumbull subsequently worked on *THE ANDROMEDA STRAIN* for Robert Wise, creating the special photographic effects, and that led to *SILENT RUNNING* in 1972, for which he not only created the extensive special effects but directed as well, expanding into areas where few special effects technicians have been permitted. [For an interview with Douglas Trumbull, and article, on the making of *SILENT RUNNING*, see 2:2:8].

Trumbull is one of the new breed of young filmmakers who believe that a motion picture should be a totally integrated process, one in which all aspects of the production complement each other. He will have the opportunity to put this philosophy into practice with his next film, titled *BRAINSTORM*, which he will direct as well as provide special effects for. It is about space travel, but with an important difference. "Using present day, contemporary settings," says Trumbull, "it is about exploration into the human mind rather than exploration *mechanically* into outer space. All I can say is that it will be very heavy on special effects—the ultimate special effects trip."

How did you become involved with CLOSE ENCOUNTERS?

I got a call from Steve Spielberg asking if I was possibly available to do the picture. At first glance I was not terribly interested. I was into a lot of secret projects and was not especially interested in doing special effects for another director as I'd directed *SILENT RUNNING*. When I met with Steven we really met eye to eye on what he wanted to achieve and what I would like to achieve. The project really tied into a lot of things I wanted to get going and we really seemed to be speaking the same language. It was also an opportunity for me to amass a lot of equipment I wanted to put together at somebody else's expense. So we set up a deal to not only make the picture but to set up a special facility that would include a lot of new kinds of equipment, new technical innovations, new kinds of projectors and new kinds of cameras—a total facility geared to this type of work, the finest possible goodies to play with. So I agreed to do it. That was just about two years ago [11/75].

One of the screen credits is "Visual Ef-

fects Concepts by Steven Spielberg." Did he tell you what he wanted or were you able to develop your own ideas?

I developed a lot of my own ideas. It's just that Steven wrote the screenplay himself with a lot of very specific sequences in mind, types of objects and types of encounters. He had a very clear idea of what he wanted by the time I came on the picture. He had already written the screenplay and worked out a very elaborate storyboard for the whole picture working with George Jensen, a super illustrator. Steven and I agreed right then, even before I started work on the picture, that he would take that credit because he wanted people to know he was involved in the creation of the entire project and functioned more than just as the director. I also had the point of view that I wanted to clarify how that was worded as I had the bad experience of working for 2½ years on *2001* and then have Kubrick take the credit which read "Special Photographic Effects Designed and Directed by Stanley Kubrick." That credit was inaccurate and prevented me from getting the Academy Award given for the *2001* special effects.

How many concepts of the Alien did you go through before you arrived at the one that appears on screen?

What's on screen is very close to what the original concept was. I'm sure you know, especially with what you printed in the magazine [6:2:34], there was no single way to achieve what we wanted, to match as closely as possible J. Allen Hynek's average sightings. They all tended to relate to some kind of humanoid form with very thin extremities, shorter than an average man and with an oversized head, no ears and large eyes. These were some of the basic features we tried to adhere to. In the extraterrestrial crowd scenes, we used small children who were cast specifically for thin arms and legs and wore these masks which you published pictures of. We improved them a little and they were only used for crowd scenes.

For closeups we used a system Carlo Rambaldi devised to give the Alien expressive character, arm movements, head movements and facial expression. That's the first extraterrestrial you see in that wall of light, a very thin and extremely tall creature. It is humanoid but less humanoid than the little ones that come out. There is a lot of transparency to it and the skeletal structure, and you can almost see through it. It was really a fairly small-scale puppet photographed against a miniature background. We built a smaller scale version of the Mothership and photographed it against that.

As the spaceship door opens some tentacles come down and roam around. What are they supposed to be?

It is hard to make out just what that is.

How large was the model of the Mothership?

Six feet in diameter. It is a very complicated miniature, very detailed, and took several months to build. It is full of all kinds of tricky wiring systems and neon lighting, tungsten bulbs and every imaginable kind of fibre optics.

You never see any of the spaceships very clearly. They are always bathed in lights. How many ships were there?

There were a couple of dozen different types. What we made up was sort of a *UFO* kit. It was a modular system of *UFO* com-

ponents that we could build up almost in any shape we wanted on a single structure. Everything you see where there are multiple objects is really a single system used in multiple ways, with the exception of some of the oddball shapes, like the flats or flying wings.

The idea was that the sightings going back to the technical research we could get were always described in terms of brilliant lights of different configurations that seem to imply a shape, but the shape always seemed implied instead of someone saying I saw a metal surface that had rivets in it, or anything like that.

In the highway scene when the police are chasing the saucer, there appears to be three different ships and one that is pyramid-shaped. What was the actual shape of that one?

It was actually a circular cone shape, with a rounded top on it. The whole idea was that you never know what size or shape these things would come in. There is a line by the little kid who is very enthusiastic about the ships. This innocent little kid is the only one who had a positive, good vibes response. He's seen the extraterrestrials and they look like him—they're playmates. When the one saucer comes over he yells "Ice-cream." That was in the script, so we made a kind of ice-cream cone shaped object that had a lot of other lights on it to sort of make it less discernable.

One of the finest effects is the saucer that flies through the expressway toll booth, chased by the police cars. How was that done?

One of our main ideas was that whenever an object passes over, when any phenomenon occurs, it was to cast a corresponding light on the people, the environment around it, so that it all tied together. If an orange object went over, a big orange light would pass across everyone's face. In the toll booth scene there was no way to do that because we couldn't drive a light source through the toll booth and make it believable. What we did was to shoot a real toll booth on location in Los Angeles with no effects whatsoever. Then we built an identical miniature toll booth with little glass windows all made out of plastic and all painted sort of a medium gray and on tracks we could fly miniature *UFOs* through the toll booth which were illuminated and lit-up all the various surfaces of the toll booth. That surface illumination was simply double-exposed over the real toll booth so that the reflections on the windows correspond to all the lighting effects and shifting shadows that would occur naturally on the miniature.

Was that sequence created by trial and error or did you have it all planned in advance?

We knew that was how we were going to do it. We planned it before we shot it. The exact details of how we built the miniature were still up for grabs. We decided we would either make an exact duplicate of the toll booth in miniature and photograph it with a matching lens or we could shoot it with a different lens by building a forced perspective miniature, which is in fact what we did. The toll booth miniature was a bizarre-looking, bent-shaped, forced perspective miniature, built for purposes of lighting and perspective. It worked perfectly according to plan.

I'd say it took about two to three weeks

Middle: Visual effects creator Douglas Trumbull (left) and director Steven Spielberg work with the motion control tracking device which allowed for camera movements during matte shots. The device is similar in principle to the Dykstraflex equipment used in STAR WARS. Top: Production artist George Jensen's visualization of the Mothership at the Devil's Tower landing site. Bottom: The actual scene as it appears in the finished film. The motion control tracking device was used in this scene to pan with the Mothership as it flies in overhead.

to build the miniature and another two weeks of photographic trial and error to complete the sequence. It is hard to say how long it took to do any one effect because you'd do a test on one effect and leave the camera locked off to that scene and then go shoot something else, waiting for the film to come back the next day. So we had up to twelve cameras running at any one time in different areas of the shop. It was a continuous process of evolution on all the shots.

The film has some interesting matte work. The Muncie farmhouse against the night sky is a beautiful shot. Can you tell us about that?

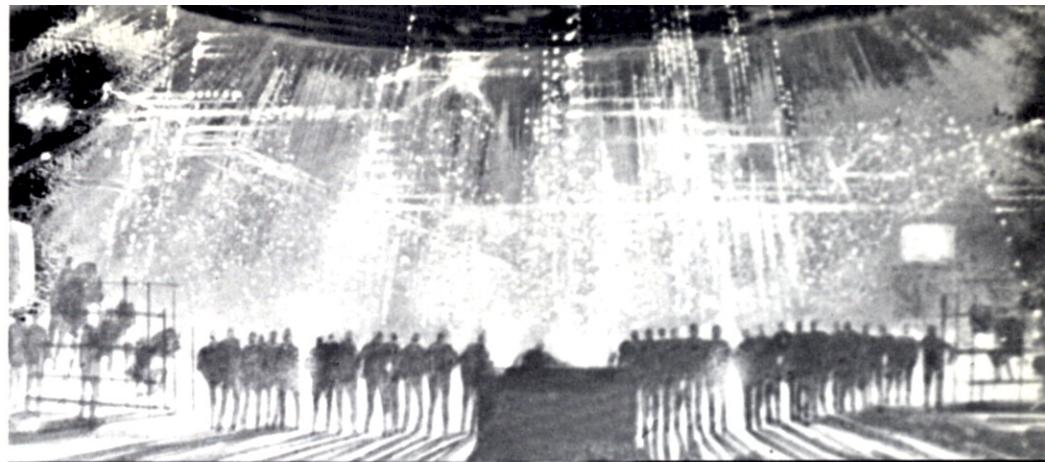
It was actually shot in late afternoon because we needed a balance of light between the light in the house and the exterior light. The sun had gone down when we shot. We waited for the fifteen minutes a day when the light was right. It was shot with 65mm cameras and locked off in position from three or four different angles and it was an absolutely blank empty sky. There were no clouds that day. In post-production we matted out the sky and all the trees. We removed everything except the building and the immediate foreground where the girl was. We framed the camera upward so that her head was always below the horizon and then Matt Yuricich did a matte painting that placed everything out on the horizon, repainting the trees at the horizon, and the field, repainting the trees around the house, and then we painted a little sky haze that went up to the sky, the sky itself being replaced by another piece of film photographed in a huge water tank. We created all the clouds by injecting a liquid white paint into the water in miniature and shooting about seventy-two frames per second.

You mentioned that you filmed in 65mm rather than 70mm. Could you explain that?

It is the same thing, really. 65mm is the original negative size. 70mm is what you get in a theatre because 5mm are added to accommodate the sound track.

Was the town sequence where the lights go out also created with mattes?

That was done a couple of ways. When the lights go out one shot was an actual shot of a town, in fact Los Angeles, shot from a tall building, a bank overlooking a housing tract, again shot in late afternoon. We matted out the sky and replaced it with a painted sky and added another exposure of stars on an animation stand. Our matte stand could accommodate matte paintings about six feet wide and we could put a frame clip in the matte camera and project a frame and trace the windows of the buildings, painting in all the lights. We couldn't get an exposure that included the ambient light of the town plus the lights of the buildings, so all those lights were totally double-exposed in. Then we shot it sin-



"CLOSE ENCOUNTERS OF THE THIRD KIND was a totally integrated production. I wouldn't have done it any other way. That is one of the big problems with films in general and the big problem for special effects people. We are always handed footage that was photographed by somebody else at some other time. A lot of producers and directors think that you can just buy some special effects when you're through."

—Douglas Trumbull

gle frame and painted out lights as we needed, block by block, in groups, with black paint.

There was also a wide angle shot of the whole countryside which was totally miniature. We built some very detailed forced perspective miniatures of the Indiana countryside with fields and little barns and buildings, all of which is very dimly exposed, just enough to look real. We couldn't find any real terrain that matched our needs.

The sequence at the end where you come to the "landing field," was that all one sound stage?

It wasn't a soundstage. It was shot in an airplane hangar in Mobile, Alabama. We went to Mobile because it was the only place we could find a big enough building. We looked all over the world, mostly in the United States, and stumbled on these two very large airplane hangars at a disused airfield in Mobile. Even they were not big enough. We ended up adding a big extension to one of the hangars. We had to build a 150 foot tent onto the end of it because the set was six times larger than the biggest sound stage in Hollywood. That was a big, big set. It included not only the set, but the rocks around the set and a huge black drape 360° around. We built the tent out one end, all blacked out, where the sort of blue landing lights extend out.

You were on the sets much of the time and not just at the workshop patching in the effects?

Yes. It was a totally integrated production. I wouldn't have done it any other way. That is one of the big problems with films in general and the big problem for special effects people. They are always handed footage that was photographed by somebody else at some other time. A lot of producers and directors think that you can just buy some special effects when you're through. I think that *DAMNATION ALLEY* is a classic example of that. You can't take that approach, and that's what they did. You just can't save live action photography once it's photographed incorrectly. If they allow the camera to jiggle or move during a matte then it is just hopeless. That film could have been good, I'm sorry to tell you. I was involved in the picture. I helped it get started. I was going to co-produce it and possibly direct it. We had some fantastic designs and some good script ideas and they just turned it into shit. It's really a shame.

What is Future General Corporation?

Future General is a company that I formed 3½ years ago, a subsidiary of Paramount Pictures, to do research and development on how movies are made and how

to entertain people in general. I was very frustrated with how movies were being made. Ever since the anti-trust accord that separated the studios from the theatres, the studios couldn't own their own theatre chains. That essentially crippled any kind of technical growth in the whole industry in terms of exhibition. Everything just locked in right there. It was either 35mm or 70mm, and a certain shape theatre, and certain kind of screen, and certain mediocre sound systems, and that's the way it's been. All the innovations that happened before that resulted from competition between the studios, with *Cinemascope*, *VistaVision*, and *Todd-AO*. All the improvements that had been going on simply stopped. I came up with some ideas that I thought would be major breakthroughs in how movies could be photographed, projected and presented to the public. Future General gave me an opportunity to do that experimentation. I'm now ready to shoot the first major feature film in a totally new process for a totally new theatre.

Did Future General have anything to do with CLOSE ENCOUNTERS?

Yes. Future General simply subcontracted all the special effects.

Has Future General been nominated for an Academy Award?

One of the systems we used on *CLOSE ENCOUNTERS* we call a Motion Control System, a pretty sophisticated electronic data recording system for recording all the movements of the camera in a shot. The same kind of machine, built by the same people as a matter of fact, was used for a different purpose in *STAR WARS*. This system that we built was nominated for an Academy Award this year as a Technical Achievement.

We went on location in Mobile, Alabama with this electronic system. We had a special camera built that had sensors which are optical encoders on the pan, the tilt, the focus change, and the dolly track movements. We could record within a 10,000th of an inch anything that the cameraman did during a take so that once we went back to shoot the miniature or to shoot the effects that correspond to that shot we could recreate those moves exactly so that when you matted two pieces of film together they moved exactly together as one. Ordinarily in movies you're doing a special effect and you have to lock the camera, you can't pan or tilt or change anything. You don't touch the camera. This makes for static images. We wanted a lot more flexibility than that since our objects were moving a lot. This was a way, for the first time in movies, to have that kind of camera freedom during a composite matte. It just worked terrifically.

This award then is for the equipment rather than a special effects award for the film?

Yes, it's something you apply for way before the other awards are even nominated. The Technical Awards Committee will eventually make a decision on the award and announce it before the official Academy Awards ceremony which features the other voted categories. This award is more like a decision making process within the Academy's Technical Branch. It shouldn't even go to me or to Future General but to the two guys who built the system.

I understand your father, Don Trumbull, worked on STAR WARS?

Right. When he was young he started in the movie business. I was born in 1942 and I think he left the business about 1943 when the war started. He worked on *THE WIZARD OF OZ* and some other films. When the war came he became more of a legitimate engineer and went into the aircraft business. When I started making *SILENT RUNNING* I asked him if he would like to come and work with me. He is a brilliant engineer and I need a lot of special engineering. I'm always building new cameras, new rigs. Everything I use is not available off the shelf. We build everything special to meet special needs. It seems that every picture, every project I work on needs special equipment. So he sort of started with me on *SILENT RUNNING* and we've been working ever since.

John Dykstra worked with me on *SILENT RUNNING* and then we worked on several projects after that. John took *STAR WARS*, which I didn't want to work on because I wasn't interested in doing another space opera. John and I together had built a smaller version of this more sophisticated electronic machine called a Miniscan, an electronic controller for up to four motors controlling camera pan, tilt, dolly and focus. You could run them automatically interlocked which was a big jump beyond what we built for *2001*, which wasn't any more complicated than a washing machine. So when John went to do *STAR WARS* he started building the next generation of this electronic system and my father worked for him as an engineer and then my father worked on *CLOSE ENCOUNTERS* in the same capacity. He ended up building camera equipment for both of us. We actually share equipment occasionally, share designs. We're all sort of a small group of people doing the same work and it makes the process of technical advancement happen a lot faster because we have such tight communications. My dad built all the mechanical systems for the Motion Tracking System, plus conquered a lot of other engineering problems on the picture.

How was CLOSE ENCOUNTERS to work on compared to 2001?

It was certainly a job of equal magnitude. The difficulty for me on *CLOSE ENCOUNTERS* was the sort of bizarre juxtaposition of extremely unusual effects in an extremely ordinary setting. This is one of the most difficult effects to achieve in my opinion. I think it is a simpler task to create laser beams and spaceship fighters in an essentially comic book atmosphere than to be tied down to reality with just ordinary country roads with fence posts and trucks and cars. You have to make all this stuff happen and yet be believable. It was very difficult, certainly more difficult than *2001*, and a lot more technically sophisticated.

The budget for CLOSE ENCOUNTERS is quoted at between \$18 and \$19 million. How much of that was for special effects?

I'd say \$3.5 million was for photographic special effects. I couldn't say how much money was allocated to Roy Arbogast's unit doing the practical physical effects. Roy was in charge of things like screws that come out of the floor and smoke effects and jiggling mail boxes, and all that comes under the heading of mechanical special effects.

This year special effects films seem to be a fad. Do you think the studios will con-

Middle: Visual effects creator Douglas Trumbull, director Steven Spielberg, and matte artist Matthew Yuricich (right). Spielberg collaborated closely with Trumbull and his crew in realizing the film's special effects. Shown is some matte art magic from the film: Top: Melinda Dillon first sees the UFO which abducts her son. A matte painting replaces everything at the horizon and above, including trees surrounding the house. The cloud formation was achieved by injecting white paint into a water tank. Bottom: The Devil's Tower landing zone is completely surrounded by matte art.

tinue to lean heavily toward them?

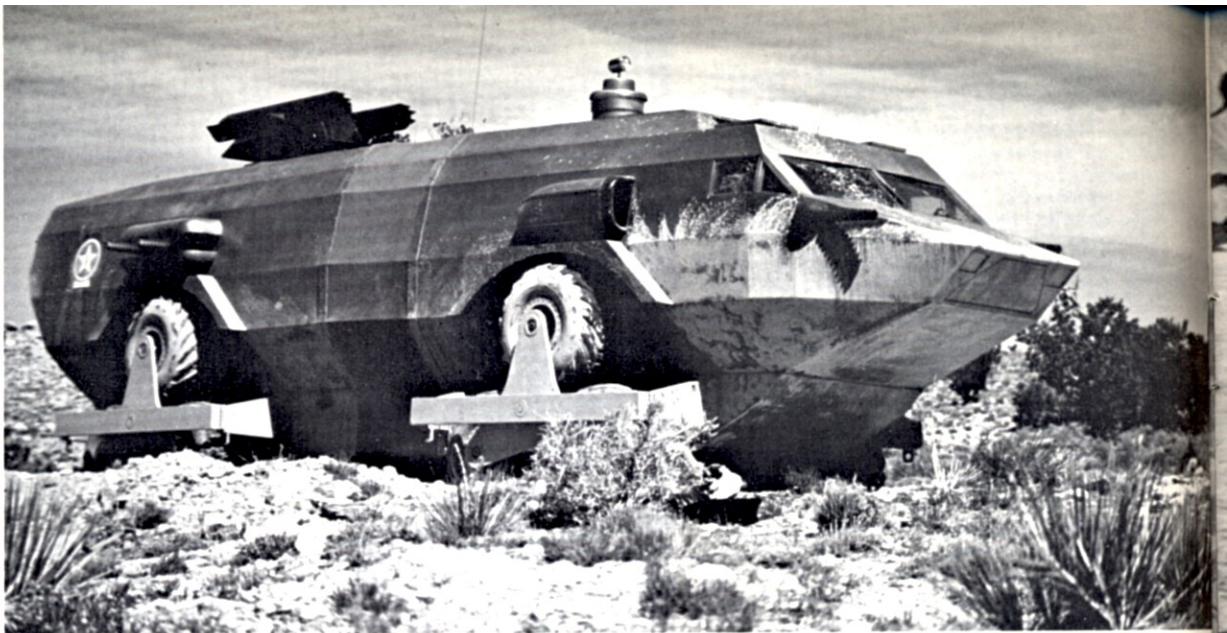
I think they're going to try. I see it happening already. The fallout from STAR WARS for instance is pretty heavy and the studios are gearing up to try to do it. A lot of it is oriented towards television, strangely enough. There are two major television projects on at Universal. One is BUCK ROGERS and one is called GALACTICA. The latter is almost a direct copy of STAR WARS as a television series with a different name. The characters are all the same type. It's a rip-off. BUCK ROGERS is trying to recreate the classic story of Buck Rogers in the 25th Century. It's a totally different design but again it has spaceship battles. CLOSE ENCOUNTERS, I'm sure, will be successful and it will spawn a whole bunch of flying saucer and UFO films and television rip-offs. Unfortunately, there aren't that many good effects people to go around and I think it is going to result in a lot of effects films that aren't very good.

Today's successful science fiction films seem to be made by a younger generation of filmmakers such as Lucas and Spielberg. Why do you think this is happening?

From my own experience, I grew up on Disney movies and a certain amount of fantasy and a lot of special effects. All the Disney films with their animation are full of special effects. Spielberg and Lucas are the same way. They're both guys who have grown up on this sort of fantasy stuff, and all three of us played with super 8mm movies when we were kids. We all made special effects when we were ten years old. We grew up on them, whereas the older technicians came from the stratified studio system where there was a director who didn't know anything about special effects and there was also a special effects man who didn't know anything about directing. The old studio department system collapsed years ago. When portable lights and portable cameras and portable recorders came in everybody went on location and the studios collapsed. It became a whole different, quick shoot on location, economic system and they got rid of the overhead which consisted of bulldozing their stages and getting rid of their departments. So the older effects people didn't get involved in the process of making a movie. They were hired effects experts. I think the younger filmmakers are integrating special effects and the technology and the story into one package which I think is the only way it can happen. I am coming up with ideas which are not just gimmicks and not just ideas for special effects, but ideas to tell stories and make movies. I am a filmmaker, first, who has an interest and an expertise in special effects, second. The director must more fully understand the technical process involved in special effects in order to integrate them properly into the film as a whole.



Scenes from *DAMNATION ALLEY*, currently in release by 20th Century-Fox. Left: The Land Master, a sophisticated all-terrain vehicle. Right: Tanner (Jan-Michael Vincent) plows through a nest of giant scorpions. These large mechanical props were not seen in the final film, and were replaced by matted-in live scorpions.



DAMNATION ALLEY A 20th Century-Fox Release. 10/77. In DeLuxe Color and Sound 360. 95 minutes. Executive producers, Hal Landers, Bobby Roberts. Produced by Jerome M. Zeitman, Paul Maslansky. Directed by Jack Smight. Screenplay by Alan Sharp and Lukas Heller based on the novel by Roger Zelazny. Associate producer, Maury Cohen. Production manager, Bill Davidson. Director of photography, Harry Stradling, Jr. Production designer, Preston Ames. Music by Jerry Goldsmith. Art director, William Cruse. Set decorator, Norman Rockett. Assistant director, Don Roberts. Sound, Bruce Bissenz. Edited by Frank Urioste. Special effects, Milton Rice. Special photographic effects, Lin Dunn, Don Weed, Frank Vanderveer. Stunt coordinator, Dean Jeffries.

Tanner Jan-Michael Vincent
 Denton George Peppard
 Janice Dominique Sanda
 Keegan Paul Winfield
 Billy Jackie Earle Haley
 Perry Kip Niven
 Haskins Mark Taylor
 Technician Trent Dolan
 Mountain Men Robert Donner
 Seamon Glass
 James Parkes
 Roger Creed
 Landers Murray Hamilton

Soft on the heels of their phenomenally successful *STAR WARS* comes *DAMNATION ALLEY*, 20th Century-Fox's latest big-budget offering in the current science fiction boom. It would be a pleasure to report that this first filmed novel of Roger Zelazny's, one of the most eloquent and poetic of all fantastic writers, is also the first successful science fiction *film noir*. After all, Zelazny's book (concerning the capture and forced last ride of Earth's sole remaining Hell's Angel, a sort of Post-Holocaust *EASY RIDER*), was a work soaked in *noir's* nihilistic atmosphere and imagery. Hell Tanner's journey

across a radiation-scorched United States, the surreal inferno of bitter relationships and landscapes he encounters along the way were all dark in tone, jolting in treatment and, most relevantly, highly cinematic. Characteristically the producers of *DAMNATION ALLEY* have enthusiastically admitted that it was precisely Zelazny's visual talents that drew them to the work in the first place (6:2:29). So it would be a further joy to tell you that Zelazny's imagistic talents have been faithfully transposed to the medium that was literally begging for the transition. Unfortunately, the transformation of novel to screen just goes begging.

It's a tired truism that when Hollywood lays hands on this type of generic material, all the elements crucial to the *gestalt* of the piece—themes, characterizations, coherence—are immediately scrapped in favor of the effects. *DAMNATION ALLEY* is no different in this respect. And it's always a bad, bad sign when a science fiction film is released with a gimmick. *DAMNATION ALLEY* continues this sorry tradition with "Sound 360," a simple-minded process that surrounds the audience with speakers and subjects them to the illusion of aural movement. It's nothing more than an expansion of William Castle's infamous gimmick for *THE TINGLER*, the butt buzzer, and just as relevant.

But *DAMNATION ALLEY*'s lackluster qualities must be laid at the feet of all involved in the project, not just the sound department—from the tacky production values to the cinder-block editing to, especially, the TV Movie of the Week style script by Alan Sharp and Lucas Heller (who did the otherwise fine writing chores on *THE DIRTY DOZEN*). In their alterations, Sharp and Heller have not only castrated but lobotomized Zelazny's novel as well, coming up with a product as blandly inoffensive as warm tapioca.

In a role which should have been portrayed by William Smith, everyone's favorite genre villain, biker Tanner has been diluted into an Air Force officer. Jan-Michael Vincent portrays the role as if he'd just wandered in off the set of

WHITE LINE FEVER. Operating out of a secret military installation in the Southwest, apparently manned by half the available manpower in the Air Force, Vincent plays part of a two-man team whose function it is to provide a retaliatory strike force in the case of nuclear attack. George Peppard (wisely underplaying and saddled with a hybrid Southern accent only an Angelino could dream up) is the other team member. Within minutes of the film's opening the obligatory holocaust arrives. Director Jack Smight manages one of his few effective scenes here; as a large computer-created map of the USA fills the screen, scores of white dots blossom silently on its surface. Off-camera the dry voice of a technician calmly drones out the names of cities whose annihilation those dots represent—New York, Philadelphia, Washington, and so on. Armageddon as statistic—the enormity of this massive destruction counterpointed by the detachment of its mechanical human observation hits an ugly contemporary disassociation squarely on the head.

Unfortunately it's the only such observation the film has to make. Another interesting element of contrast which begins to develop early on—the conflict between Tanner's nonconformity and Peppard's discipline, both of which actually complement the success of the other during their various adventures—quickly sinks without further trace. Thought, apparently to Fox, mustn't get in the way of the visuals.

After the attack Smight moves events quickly, so as to get on with the cross-country journey constituting the core of the slim storyline. Two years have passed. Vincent and another soldier (Paul Winfield, loose and funny) have dropped out of the service and live in another bunker away from the remaining men. Their time is idled away on hobbies; Winfield paints murals on the outer walls of their concrete home, Vincent takes expeditionary rides on a dirt bike into the nearby desert towns, searching for surviving life (another feeble echo from the book). Peppard, still the lifer, elects to stay in the service

by Paul M. Sammon



"...takes everyone for a ride."

and begins constructing the Landmaster, a large, all-purpose terrain and aquatic cruiser (also the central set-piece of the film).

These mundane routines are as quickly skimmed over. The main installation is accidentally leveled by a sleeping soldier's cigarette igniting a gas leak. With the death of all personnel save Vincent, Peppard, Winfield and another airman, the quartet decide to drive to Albany in The Landmaster—which has conveniently been housed away from the blast. Why Albany? Radio messages have been received from that area and, as Peppard tersely informs us, "Because it's there."

The Landmaster itself, designed by Dean Jeffries at a reported cost of some \$300,000, is also a disappointment. Looking for all the world like a futuristic Winnebago outfitted with internally controlled rocketry, it merely becomes the LA freeway driver's ultimate fantasy. With its appearance DAMNATION ALLEY drops all further pretense and becomes effects-saturated. Since there are no characterizations to speak of, and less plot, at this point the script degenerates into a parade of incident, strung together with no regard for narrative continuity or coherence. Under violent, perpetually hallucinatory skies (nicely done laser photography effects, but poorly composited), Vincent and Peppard set off on an odyssey toward every conceivable science fiction cliche of the past thirty years.

The assorted menaces the Landmaster confronts seem to be culled from the rejeted bits of an old SATURDAY NIGHT LIVE skit. We're initially treated to that most lovable of atomic manifestations, giant bugs—scorpions, and even, in the film's nadir, killer cockroaches. Ken Middleham's handling of these insects is perfunctory, hardly up to the standards he set for himself in THE HELLSTROM CHRONICLE or PHASE IV. Another hoary plot device is dragged whimpering onto the screen when the men find a beautiful woman living alone in the ruins of Las Vegas. Poorly dressed and made up, in terrible need of locution lessons, Dominique Sanda portrays her role of

cook, near-rape victim and resident screamer with stunning vapidity. And there's more. Enter a tough but cute kid (Jackie Earle Haley) who lives on his wits by being a dead shot with a stone at forty yards.

Before they find their expected Eden in Albany, this wonderfully demographic bunch also have to cope with crazed radioactive rednecks, tornados and tidal waves. Sharp and Heller obviously spent a good deal of the studio's time watching the late show.

It is easy to see where director Jack Smight fits into all this. His reputation, resting largely on films produced during the late '60s and early '70s, almost exclusively sprang from the word "adventure." That these films were neither adventurous or particularly entertaining—many of his works lie there and stare back at you—obviously meant little to the insulated, otherworldly judgement of the studios. In their eyes he was probably a natural.

Yet, inexplicably, Smight received some good critical press during the period. One expects that this resulted from KALEIDOSCOPE's overall kinky quality, or, in the case of HARPER, Paul Newman. Not through any expertise on Smight's part. He's also no stranger to genre material (even, in a TWILIGHT ZONE episode titled "The Lonely," putting out a sturdy mood piece), but he's repeatedly stabbed his toe when working with it. THE TRAVELLING EXECUTIONER could have been a good black comedy and should have made Stacy Keach a star, but Smight flubbed both. NO WAY TO TREAT A LADY was sloppily constructed and force-fed us too thick a slice of Rod Steiger's penchant for ham. The TV adaptation of THE SCREAMING WOMAN was merely tedious, but Smight's other Bradbury adaptation, THE ILLUSTRATED MAN, was not only in execrable taste but also one of the greatest single public insults to an established living writer that it has ever been my misfortune to stumble upon. So it should come as no surprise that Smight's involvement with DAMNATION ALLEY, finally, is just the work of another faceless hack. If we have high expectations for the new fantasy and science fiction films, then we are forgetting the similar booms of the '50s and '60s and only have our own naivete to blame.

To be completely fair, there are a few effective sequences. The aforementioned cockroach attack manages to work up some queasy suspense, and the apocalyptic storm which heralds the tidal wave (punctuated by pure bolts of energy hissing overhead) even begins to approach a sense of wonder. But this build-up is immediately vitiated by the terrible quality of the following miniatures, the amateurish process work and, incredibly, a quick clip of the death throes of the island from Pal's ATLANTIS, THE LOST CONTINENT. This may generate a fleeting pang of nostalgia for the more knowledgeable in the audience, but it certainly doesn't qualify as committed filmmaking.

In the final analysis, there's really so little to say about a film like DAMNATION ALLEY—who, after all, hasn't already seen it a dozen times before?—that its only legitimate reverberation is perceived as a question. The question, really. Despite increasing market sophistication, why have science fiction films remained continually cyclic, continually formulaic? It's a terrible irony that the machine which produces pictures from spinning emulsified reels, sound from lines printed on that emulsion; that the only true amalgam between magic, art and technology—the only true science fictional industry, if you will—should remain so stubbornly conventional in its treatment of futuristic themes.

But why go on? DAMNATION ALLEY is nothing more than a big-budget '50s monster movie, devoid of the charm, occasional loony grace, and even less intelligence than its predecessors. This utterly pedestrian film stands as contemporary proof of the axiom which holds that those who do not learn from the past are doomed to repeat it. In trying to cover all the bases, producers Zeitman, Maslansky, et. al. can only come up with a no-hitter. DAMNATION ALLEY takes everyone for a ride. ■

Scenes from *3 WOMEN*, Robert Altman's dream-film, currently in release by 20th Century-Fox. Right: Three women in one of Janice Rule's swimming-pool paintings, painted by Bodhi Wind. Left: Sissy Spacek in an eerie sequence which plays off her *CARRIE* persona, as she watches the still-birth of Rule's child and refuses to go for a doctor. Odd makeup and hairdressing, and Spacek's rigid body movements add to the scene's disturbing quality.



3 WOMEN A 20th Century-Fox Release. 4/77. 122 minutes. DeLuxe Color. Produced, written and directed by Robert Altman. Music by Gerald Busby. Art director, James D. Vance. Edited by Dennis Hill. Director of photography, Chuck Rosher. Visual consultant, J. Allen Highfill. Sound, Jim Webb, Chris McLaughlin. Associate producers, Robert Eggenweiller, Scott Bushnell. Makeup, Monty Westmore. Murals by Bodhi Wind. Production executive, Tommy Thompson.

Millie Lammoreaux Shelley Duvall
 Pinky Rose. Sissy Spacek
 Willie Hart Janice Rule
 Edgar Hart Robert Fortier
 Mrs. Rose. Ruth Nelson
 Mr. Rose John Cromwell
 Polly. Leslie Ann Hudson
 Peggy Patricia Ann Hudson
 Ms. Bunweill. Sierra Lecheur
 Dr. Maas Craig Richard Nelson

Roy is not as thin as Shelley Duvall, and a *JOURNEY TO THE FAR SIDE OF THE SUN* wouldn't net as many doppelgangers as *3 WOMEN*, a visionary tale of cosmic twinning. The notion of "cosmic twins" or "time twins"—people unrelated by birth but leading parallel lives—has basis in fact (albeit unexplained except by astrologers) and also has relevance here, especially so since Spacek and Duvall are the same age—27. The German physicist Otto Hahn, who received the 1944 Nobel Prize for splitting the uranium atom, was born March 14, 1879—the same day Einstein was born. One of the most curious cases is that of Jean Henderson and Joyce Ritter. Both were born in the same five minute period on February 20, 1947, in a White Plains, New York hospital. Both had fathers who held similar jobs at the same airport. Five children were in each family. When Jean and Joyce were six, they began living next door to each other, causing a great deal of confusion in the neighborhood and at school—for they had nearly identical fa-

cial features that made them look like birth-related twins. For photographs they sometimes donned identical clothing.

Identities merge in dreams. Identities merge in *3 WOMEN*, based on Robert Altman's dream. "I was in financial trouble," said Altman. "I needed a picture very badly. My wife was in the hospital. Everything was shaky. And I just dreamed this film, as a film. I dreamed *all* of it—the locations, the cast, the title, the theme. There was no third woman in the dream. There were Shelley Duvall and Sissy Spacek becoming three women. In the writing of the outline the third woman, the Janice Rule character, just imposed herself.

The film makes its own transformation—from a near *ANNIE HALL*-like look at cultural conditioning to a feminist extrapolation that has more in common with the science fiction of Joanna Russ than the usual American film. Georges Melies' female counterpart was Alice Guy Blache who *may* (no one seems to know for sure) deserve credit for creating the idea that film could be used to tell stories, and who, in the same period as Melies, directed fantasies, mysteries and Poe adaptations, eventually producing *IN THE YEAR 2000*, science fiction about a world ruled by women. Forgetting Blache and its own origins, the male-dominated film industry has, for decades, devised countless movies in which women serve merely as backdrops, display fashions and skin or offer reactions to the actions of men, stories where the women are not part of the plot but are "furniture," as in *SOYLENT GREEN*.

In *3 WOMEN* it is *men* who are cast as sex objects—relegated to the background where they role-play with guns, alcohol, uniforms and motorcycles, unaware that their authority is being usurped. The central male figure is Edgar Hart—central because he is sexually involved with all three women. He is depicted as a boozing frontiersman with no frontier left to conquer, an ersatz cowpoke, a useless leftover from the West with a phoney masculine movie-style banter that rings hollow.

From the beginning, water flows

throughout, bringing cyclic feminine associations floating to the surface. Sometimes this is accomplished with a watery scrim overlay on the bottom half of the frame, moving like a tide, similar to those devices imitating tidal waves which are sold as novelties.

The three women are Millie, Millie and Millie, a namegame not unlike the way characters were named in Altman's *IMAGES*. The childlike Pinky Rose says her real name is Mildred. The rose in an ancient symbol of secrecy—as in *sub rosa* and the rosy cross of the Rosicrucians. Duvall is Millie Lammoreaux, who has, perhaps, borrowed her identity from her previous roommate, Deidre. The root of the word "twin" means "two strands twisted together," and the film's main two characters, both transplanted Texans in California, are "doubles" of the actresses, as revealed by the names of their hometowns. Millie is from Houston, as is Duvall. Pinky says she lived "near Longview," site of Spacek's hometown, Quitman.

Pinky, described by Spacek as a blank page, begins work as the Desert Springs Rehabilitation and Geriatric Center where each old person is paired with a young woman attendant. Here Pinky meets Millie, finds Millie's lifestyle of constant consumer chatter "perfect" (no one else bothers to listen) and begins to fill in the blanks. Millie lives at the Purple Sage Apartments in a bright yellow bachelor girl apartment. Pinky eagerly moves in with Millie, immersing herself in Millie's life, borrowing her possessions, her Social Security number and eventually her name.

Also employed at the DSRAG Center are the identical twins, Peggy and Polly, who personify the film's mystical extensions of doppelgangers, reflections, replacements, matches and shadow images. It's an ancient theme, and twins have turned up in countless horror and fantasy motion pictures—*DARK INTRUDER*, *THE DUNWICH HORROR*, *THE OTHER, SISTERS* and more.

Peggy and Polly usually glance around, toss their hair and walk in total synchron-

by Robert Stewart



“...a visionary tale of cosmic twinning.”

ization. In the water at the DSRAG Center, Pinky (with the number “½” from a partially hidden depth marking seen over her shoulder) gawks at Peggy and Polly together on the other side of the pool. They are leaning inward, positioned so that they form a mirror image—suggesting the rare cases of mirror image twins who sometimes even have heart, appendix and other organs on different sides of the body.

Riding with Millie, Pinky wonders out loud what it's like being twins, do they “switch?,” do they ever get themselves mixed up? Millie doesn't want to hear this, but it's a scrap of dialogue that heralds events to come. They arrive at Millie's hangout, Dodge City, a bar that represents a final bastion of fading Western masculinity with its dirt track for bikers and target range. Both the Purple Sage Apartments and Dodge City are run by Edgar and his pregnant wife Willie. Willie expresses her pent-up rage in a series of fantastic swimming pool paintings (at both locations) which illustrate a brutal and savage battle of the sexes between half-human, half-beast creatures. In these murals, painted by Bodhi Wind and often seen through rippling water while synched with non-film composer Gerald Busby's moodily moaning score, the women seem to have the men outnumbered.

Retired stuntman Edgar, brought to life with a remarkable understanding of the character by real ex-stuntman Robert Fortier, also has his twin. Millie introduces Edgar to Pinky as “Hugh O'Brien's stand-in,” and Edgar immediately corrects this to “stunt double.” It is a caricature not of Edgar but of Hugh O'Brien (as Wyatt Earp) which hangs behind the bar. There's also another male duo: two different bit characters are both named Tom.

An inebriated Millie brings Edgar to her apartment, wakes Pinky, asks her to leave the bedroom and sleep on the roll-away bed in the front room; then Millie angrily expresses a desire that Pinky move out of the apartment entirely. Dazed, Pinky makes a suicidal leap from the second floor railing to the swimming pool. Saved from drowning by Willie, she sur-

vives in a comatose state. Guilt-ridden, Millie drops all her social pretenses, devoting herself to an ongoing effort to revive Pinky. She contacts Pinky's elderly parents (portrayed by an actor-actress couple who are married in real life). They arrive from Quitman on Greyhound, bringing something of the rural and dusty Texas past with them, but they say little that might clarify Pinky's origins. The father, Y.R., appears to be in a near-coma himself and is clearly dominated by Pinky's mother. The couple stays in Millie's bedroom where they make love—prompting Pinky to be “reborn.” Out of the coma, Pinky becomes Millie, taking Millie's car and continuing Millie's diary entries, although this “new” woman has an aggressiveness and direct manner lacking in Millie Lammoreaux. Pinky was sexually naive, but the Pinkymillie person succeeds (where Millie had failed) by skillfully manipulating men in a predatory way; men slavishly surround her just as described in Esther Vilar's 1972 book, *The Manipulated Man*, which details how men are exploited by women. Millie, in turn, wears less make-up and becomes subservient to her Pinkymillie twin.

Milliepinky allows Pinkymillie to take over the bedroom and Pinkymillie has a dream, quite different from most film dream sequences, with grainy, color-drained, subliminal and continually dissolving glimpses of Pinky's past and future. One brief moment shows a dead Pinky in a bloody dress, knifed in the chest; the previous “real” situation had simply involved the spilling of a jar of sauce on the front of the same clothing. Less easy to discern is a key visual—Peggy and Polly in a repeat of their mirror image pose at the DSRAG pool, their faces overlaid with a barely perceptible superimposition of the faces of Pinky and Millie.

The dream ends. A subdued Pinky awakens and joins Millie in bed. Just at the moment they seem to achieve a stable and fused state of twinning, they are interrupted by a drunk Edgar. Millie is once again dominant, and Pinky follows her about the room in a step reminiscent of

the synchronized Peggy/Polly walk. Early in the film Pinky is seen falling into step behind Peggy and Polly, cuing the beginning of the “third woman” concept as originally dreamed up by Altman.

Learning that Willie is having her baby and has been abandoned by Edgar, Pinky and Millie rush to her. With Millie an ineffectual midwife and Pinky ignoring Millie's demand that she get a doctor, the male child is stillborn. Millie emerges from Willie's house with her bloody hands extended, a moment prophesied in Pinky's dream. She slaps Pinky with a bloody hand, but Pinky reacts only as if this event has played out in a predestined fashion. For Pinky has become a Harpy, as fully vindictive as Spacek in *CARRIE*. Her murky past now seems mythic, her parents not merely elderly but ancient. Her real-life and filmic origin is perceived as a synchronistic pun: she is the Woman who came to Quit Man.

The ending is a leap forward in time. A yellow Coca-Cola truck (following the film's color scheme of yellow as a symbol of consumer culture) pulls up at Dodge City and dialogue with the young deliveryman reveals that Edgar has died in an undefined incident with a gun. According to Altman, all three actresses “think that they killed him. Sissy is sure of it. Shelley has come to me and said, ‘I know that I killed him.’ And Janice knows that she killed him. They all have logic for it, and I can agree with all of them, but I don't think any of them are right.”

“Nobody needs you,” is Millie's last line to Edgar. In the final scene, Millie, Pinky and Willie live as a feminist collective—with Millie resembling and supplanting the depleted Willie while Pinky refers to Millie as her “mom.” The male child has been replaced by a female child. With Edgar and his son gone, the male line has ended. Dodge City has been transformed from bar to lunch counter with all masculine paraphernalia missing from its interior. The cops, bikers and gunslingers are gone. The target range and dirt track are silent. The men have vanished, replaced by a matriarchy which would have delighted Alice Guy Blache no end. ■

Scenes from *ALLEGRO NON TROPPO*, now in release by Specialty Films. Left: The cat from "Valse Triste" remembers its home as it used to look. Middle: An escalator leads to perdition and the mouth of the Devil in "The Firebird." Right: An unusual bit of business from the finale segment.



ALLEGRO NON TROPPO A Specialty Films Release. 9/77. 75 minutes. DeLuxe Color. Produced and directed by Bruno Bozzetto. Screenplay by Bozzetto, Guido Manuli, Maurizio Nichetti. Animators, Bozzetto, Giuseppe Lagana, Walter Ciazzutti, Giovanni Ferrari, Giancarlo Cereda, Giorgio Valentini, Guido Manuli, Paolo Albicocco, Giorgio Forlani. Animation and special effects photography, Luciano Marzetti. Live action photography, Mario Masini. Live action assistant director, Maurizio Nichetti. Editing and sound effects, Giancarlo Rossi. Music by the Berlin Philharmonic Orchestra, Herbert Von Karajan, conductor: "Prelude to Afternoon of a Faun" by Claude Debussy, "Slavic Dance No. 7" by Antonin Dvorak, "Bolero" by Maurice Ravel, "Valse Triste" (Sad Waltz) by Jean Sibelius. "Concerto in C Minor" by Antonio Vivaldi, "The Firebird" by Igor Stravinsky. Cast: Maurizio Nichetti, Nestor Garay, Maurizio Micheli, Maria Luisa Giozannina. Italian with English sub-titles.

I am, happily, unafraid in calling *ALLEGRO NON TROPPO* the most important animated feature film in years, at least measuring up to early Disney, and far surpassing anything done in the field since *YELLOW SUBMARINE* (1968). It redefines the art of commercial animation. Italian producer/director Bruno Bozzetto does more than just steal the torch from the likes of George Dunning and Heinz Edelman. He adapts a range of styles under one conceptual umbrella and allows his composition to spill onto a *campagna infinita* with imagination. But in structuring the film as a satire of *FANTASIA*, setting six animation sequences to classical music, Bozzetto cannot avoid an invariable schizophrenia in his work. He obviously respects Disney, yet the film works less as a parody of *FANTASIA* than as a showcase for Bozzetto, whose vision does not adjust to Disney's, even metaphorically.

Framing sequences filmed in tonal

black-and-white set-up each section of animation. There is something uncomfortable about these scenes, funny as they are, yet they are absolutely crucial to the equilibrium of the film. Bozzetto sets up the proverbial orchestra in a purely Fellini-like visualization of old women decked out in outlandishly tacky garb, blowing sloppily on tonedaf horns. The Maestro is portrayed by a puffy, grotesque Italian actor. Perhaps Bozzetto should have reserved making fun of Fellini for his next film; the strangeness of the live-action characters mixes up the concepts. Still, the framing are an effective combination of live action with animation, where cartoon and reality do, as I'm sure Bozzetto would like to have it, merge in a whirlwind of fantasy.

Bozzetto is 39 years old, based in Milan, Italy, and produced his first cartoon feature, *TAPUM*, in 1958. His first film released in the United States, *WEST AND SODA* (1965), was lost in a distribution shuffle, but he has not gone unnoticed. Once a student of famous English animators John Halas and Joy Batchelor (*ANIMAL FARM*), Bozzetto now owns a production company with associate Guido Manuli (who also worked on *ALLEGRO NON TROPPO*). His short subjects have been seen in various International Tournaments, and his most recent short, *OPERA* (1973), is included in a package circulating on PBS as "The International Animation Festival."

The recurring thematic statements in Bozzetto's work, frequently about humanity and concern for our planet, justifies his use of surrealistic imagery. In *OPERA*, for example, a demented Fiagro paints Death over New York City, its harbors soaked in disease, polluted plague, as the Statue of Liberty sings her song of despair through a gasmask. In another film, *SELF SERVICE* (1972), voracious mosquitoes parody man's insistence upon wasting natural resources.

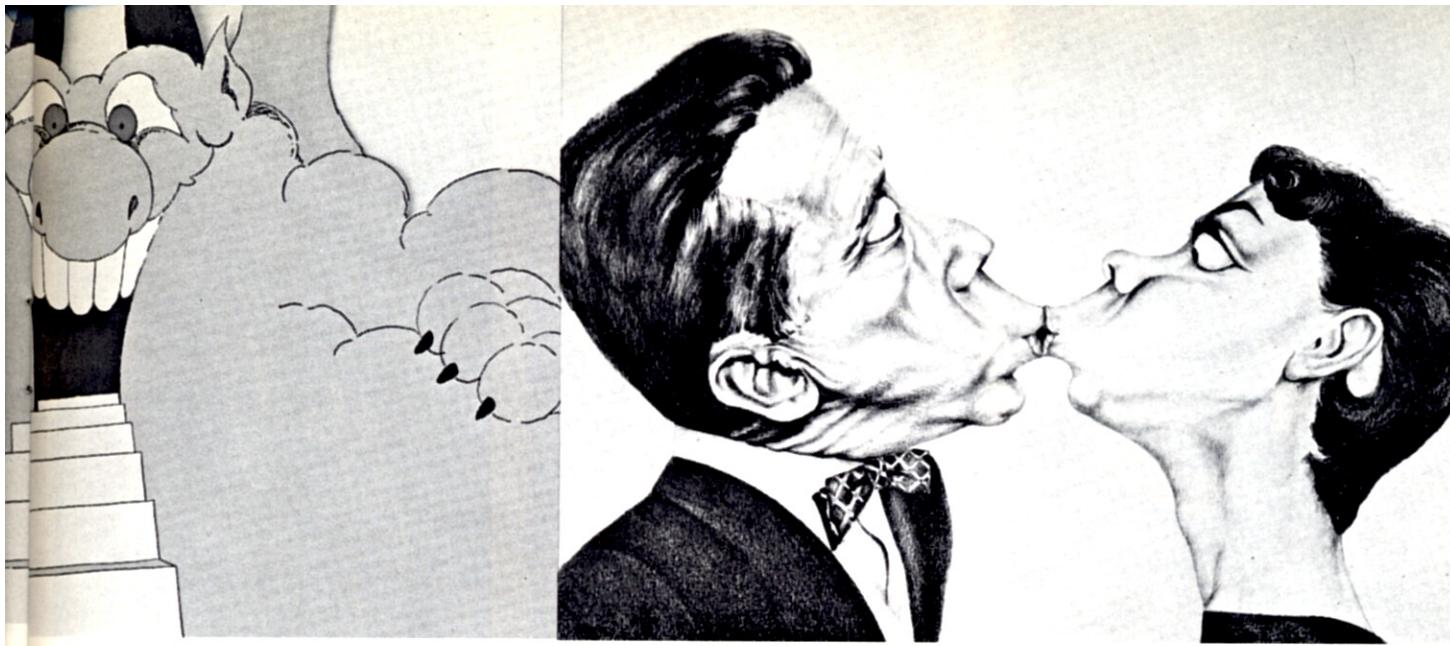
The initial calculation in sending-up *FANTASIA* is Bozzetto's conceit to tear down the impurities found in commercially animated films. Disney could have experimented fluently with his technical

brilliance, yet he held back, adhering closely to a mass-market formula. Bozzetto has Disney's technical know-how but takes his creativity into areas of expression where Disney would not have ventured. Thus, the aging satyr from "Prelude to Afternoon of a Faun" emerges as a fantasy creation with an avid human desire. He lusts for the sexual attention of young nymphs of the serene woodland, and is as sympathetic as he is pathetic. Bozzetto also doesn't mind letting the housewifey honey bee in "Vivaldi's Concerto in C-minor" sting one of the gamboiling lovers right on the ass. And, in "Ravel's Bolero," a stark, frightening salam to Disney's "Rite of Spring" segment of *FANTASIA*, man destroys the last remnants of an emblematic animal heritage in a stinging indictment of human evolution and savagery.

"Bolero" is the film's most outstanding segment, depicting a surreal evolution from the energized residue inside an old Coke bottle to the age of dinosaurs and beyond. Even the horror and primeval imagery of this sequence has its own special elegance. The golds and browns careen off of red-tipped mountains and shatter through the dense, grey air of another era, settling on the rain-drenched earth inhabited by the denizens of ancient, craggy landscapes. The dinosaurs, after having braved a severe storm and the volcanic upheavals of their prehistoric terrain, enter a city of moving skyscrapers—the cement monstrosities rise from the ground in a second's notice, murdering the pitiful animals by shearing through them mercilessly. From the solid mass arises a mile-high human figure. Its face is human, but wait...it cracks apart from within, revealing the loathesome living head of an ugly ape, leering mischievously, a leader over a land of a new humanity. The sequence is a masterpiece of charged emotionalism, one Disney cannot match for impact and sheer dynamic force.

Not that there is a need to defend Bozzetto against Disney. The fact remains that Disney and his crew filled a need for articularly produced, professional anima-

by Jeffrey Frentzen



"It redefines the art of commercial animation."

tion at a time when "adult" cartoons did not exist. Such was Disney's positive influence that equally proficient artists like Max and Dave Fleischer fell to the way-side. Today, the Disney studios have not withdrawn from the enigma they've created for themselves. Their formula pictures force severe limitations on their creativity. Bozzetto displays the energy and originality Disney once had, which turned to senility over the years. Great talent abounds in animation today (Bob Godfrey, Peter Foldes, Yoji Kuri, to name just a few), but none has produced as impressive a work as *ALLEGRO NON TROPPO*. Bozzetto is gutsy in approaching his material, and is able to comment on more than dancing alligators or talking deer.

A final problem with *ALLEGRO NON TROPPO* is its ending. It is dazzling, remarkably interesting, and completely incomprehensible. In it, the Maestro introduces a live-action character to choose a finale, there being no transitional method to end the film. The action shifts to a pair of lovers, one of whom, the woman, continually throws the same returning man off her balcony. A second finale shows an opera singer hitting a high note, while, on another planet, a monkish wise man clasps his ears in annoyance. We are then bombarded with a succession of unrelated cartoon one-liners: a hamster views a man on a treadwheel, a woman picks a flower which, in retaliation, buries her, etc. The skits are amusing, but forsake an earlier continuity in hopes of a quick laugh.

Much of the film is full of virtues, outweighing whatever structural obstacles Bozzetto cannot hurdle. Foremost, there is the animation. *FANTASIA* was an acceptable "trip" for head-stars of the last two decades; *ALLEGRO NON TROPPO* is a healthy overdose. It overextends mood, pace, and color and fares well in its indulgence. The classical music is familiar, ranging from "Bolero" to Dvorak's "Slavic Dance No. 7," "The Sad Waltz" by Sibelius, and "The Fire Bird." The orchestrations are, in retrospect, nothing special, though somehow able to give impetus to Bozzetto's illusions. At least three scenes will linger in my memory.

One is the final shot from the "Faun" segment, when a young girl being chased by the satyr lies down in a subtly green-hued meadow. She slowly dissolves into a night sky overhead, cosmically dripping into the dusk, and then dissolving into the millions of stars of the heavens. This goes beyond lyrical; it is passionate and sentient, as if watching a mass of uncoordinated colors assimilate themselves onto a canvas, forming a painting.

A second scene of requisite beauty occurs in "The Sad Waltz," wherein a lonely Keansian-eyed housecat surveys its once-happy two-story home, now an abandoned, war-torn skeleton of a building. With all of its dreams and past obliterated, the animal senses its own existence wasted without the love and comfort of humanity. Standing wide-eyed, gazing into an emotionless camera, it hears the approach of an ominous steamshovel; shortly, even the gutted tomb of its incandescent memories will be removed. Frozen in time, the cat disappears, leaving, like the Cheshire Cat, an outline. That, too, gradually melts away. With this incredible shot, Bozzetto makes us realize a sense of loss which is heartfelt.

A third extraordinary scene takes place during "The Fire Bird" entry. In it, the snake from the Garden of Eden has eaten the forbidden fruit. It tumbles through a myriad of futuristic psychedelia: a room of wall-to-wall televisions signal responses to "sex," "food," and "violence;" the snake is fitted with an uncomfortable Chesterfield suit and matching tie, sent on an assemblyline of disjointed hands which intoxicate it with sticky syringes; the rewards of religion, a crockpot of gold coin, empties into an open dome of a Byzantine cathedral. In the end, the exhausted and disgusted snake, having witnessed all the suffering and false joys of humanity, coughs up the apple and leaves it with a confused Adam and Eve. The transgression through this weird world of artificial stimulations is, to Bozzetto's credit, sustained mania. The episode begins with an engaging use of clay animation, depicting God's construction of Man and Woman from "scratch," first

building a hand and foot joined as one, then two arms and legs without a head, and so forth.

Rounding things off nicely is a cute bit about conformity set to "Slavic Dance No. 7," with a Mad-Magazine-type ending that works as a multilayered joke about the military, intuitive arrogance of man's mind, and plain old vulgarity. Bozzetto piles on the jokes pretty thick and fast; that's the point. Fast but not too fast. Bozzetto has the capacity to serve up cartoon caviar, while Disney gives us steak and klutzes like Bakshi can barely muster a salad. The cleverness is seductive, the temperance prodigal.

Technical credits are outstanding. Pastels are overwhelming, baths of prismatic harmony. Sight and sound fills the mind and I have no doubt most viewers leave the theatre with implanted hues and tinctures that, in their minds, retain the full magic of the literally animated screen. Rivers are an amalgam of shiny silver and blue reflections, radiating like a half-silvered mirror. The film is perfect for children (if they are not hampered by prudish parents who may object to some artful nudity), as it lives as an unending barrage of color and refraction. The small ones may not understand the complexities of Bozzetto's commentary, but that is not important in lieu of the startling cartoon fabrications.

Lastly, *ALLEGRO NON TROPPO* has been praised by reviewers in many cases for the wrong reasons. Their premature critical ejaculations of "classic" and "The New Disney" miss the significance of Bozzetto's film. To say that he replaces Disney is bombastic hyperbole. In truth, Bozzetto merely outshines a Disney of the sixties and seventies. Disney may have been a master of the art form; Bozzetto is an apposite comparison. *ALLEGRO NON TROPPO* is not so much a classic as a landmark. Let it pave its way towards a superior understanding of the animated form in film. Hopefully, and soon too, we will be able to gaze upon more talents like Bozzetto, filling our need for unique and positive contributions from the field of commercial animation. ■



THE HILLS HAVE EYES

THE HILLS HAVE EYES A Vanguard Release. 10/77. In Color. 87 minute. Produced by Peter Locke. Written and directed by Wes Craven. With: Susan Lanier, Robert Houston, Martin Speer, Virginia Vincent, James Whitworth.

For his new film (the title is possibly a joke on *THE SOUND OF MUSIC*'s sugar-coated song lyric), Wes Craven may not again have dug into Bergman for his story (as he did for 1972's *LAST HOUSE ON THE LEFT*), but now his work is better controlled, and because the whole has a sense of structure, the horror/suspense works more effectively. Obviously, more money was spent, and the MGM color processing helps immensely. The story, a bit contrived to set up the initial premise, concerns a multi-generation family who are stranded in their car and trailer in the desert and are slowly victimized by a group of desert crazies. This is one of the few recent horror films that is pro-family: the vacationing family, who band tightly together to fight back, is classically American. And with the help of one of their Rin Tin Tin-like family pets, turned fierce protector and aggressor (thereby saving the humans some bloodletting), they eventually win, although it all takes a toll. In a curious choice, Craven has made the crazies into a family as well—supposedly a monster child has grown up, abducted a prostitute, and sired an additionally monstrous male duo, with another offspring a girl who decides to help the humans. It's all bizarre going on a thematic level; the second generation, via their own ingenuity, clearly emerges the victor/survivor in each family. But on a blood-and-guts level, since Craven is principally a talented editor, the film moves along quite smartly.

—David Bartholomew

THE PHANTOM BARON A Raymond Rohauer Release. 12/77(c42). In Black & White. 98 minutes. Produced by Consortium de Productions de Films, Paris. Directed by Serge de Poligny. Screenplay by de Poligny with dialogue by Jean Cocteau. With: Jean Cocteau, Alain Cuny, Odette Joyeux, Jany Holt, Claude Serval, Andre Lefaur, Gabrielle Dorziat.

Made in 1942, but newly copyrighted and released by Raymond Rohauer, this is a remarkably effective example of a screen fairy tale. Written and directed by Serge de Poligny, with dialogue by Jean Cocteau, the film also serves as a concise meditation on Gothic screen effects. The opening sequence, highly reminiscent of *NOSFERATU*, follows a horse-drawn coach barreling up to an eerie chateau under grey, dead-looking skies. Images follow like a catalogue: a sinister, curt servant limping with a peg-leg, creaking doors, a howling wind, a creeping black cat, a strange nobleman who disappears from his locked bedroom.

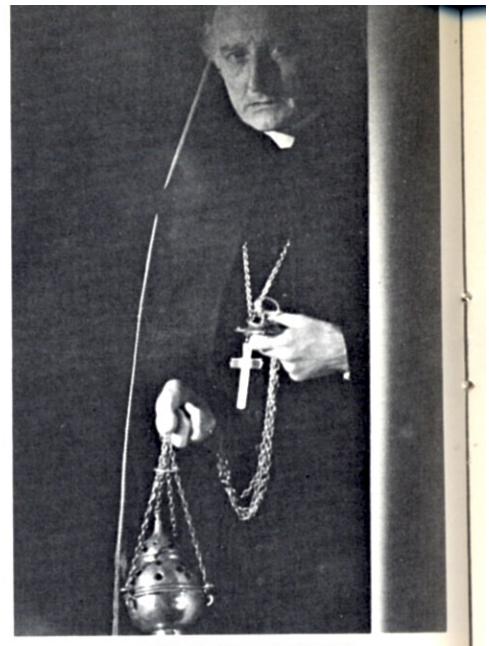
Later on, after de Poligny has developed his plot, we return to the Gothic in a dream-like sequence that is the emotional and stylistic highpoint of the film. This time, because of the development given to the characters, in particular, a gamekeeper, a wealthy girl, and her poor half-sister, both of whom he has grown up with, the same kind of (Gothic) images are imbued with an intensely romantic sense that is nothing short of extraordinary, as the gamekeeper, sleepwalking, carries off the rich woman whom he thinks he loves, her white gown fluttering ghost-like through a moonlight-heightened series of natural surroundings, only to find as he reaches his cottage that she has magically changed into the poor girl, the one he truly loves: the dream vision used as subconscious truth.

Cocteau's presence in the film clearly extends beyond dialogue-writing (and playing the titular baron, who reappears at the film's climax to change destinies, in fairy tale fashion, and then crumbles into dust). Both in the lush spiritedness of the film, and in specifics like the design of the unkept chateau with fingers of vines poking through its interiors and exteriors, this film seems nothing less than a practice run for Cocteau's great *BEAUTY AND THE BEAST*, which he will make four years later.

—David Bartholomew

THE CONFESSOR An Atlas Films Release. 5/77(c76). In Color. 103 minutes. Produced and directed by Peter

THE PHANTOM BARON



THE CONFESSIONAL

Walker. Screenplay by David McGillivray. With: Anthony Sharp, Susan Penhaligon, Stephanie Beacham, Norman Eshley, Mervyn Johns, Sheila Keith.

The films of British horror cult figure Pete Walker usually get a sparse exploitation release here, as this, his 1976 effort *HOUSE OF MORTAL SIN*, released under its original shooting title but advertised as *DEATH'S DOOR*. Written by his usual cohort David McGillivray, and produced and directed by Walker, the film is a virulently anti-Catholic exercise in which an old priest (Anthony Sharp) blackmails young female parishioners by tape recording their confessions. When a young priest becomes curious about him, Sharp goes berserk and begins killing, using, among other churchly items, an incense burner to batter one victim to death, a rosary to strangle another, and a poisoned Host for a third, the latter a particularly nasty conception. All this unabashed fiendishness is done with a straight face, and the film is cleverly put together and paced so as to minimize our disbelief. Walker plays homage to his horror forbears—there's a lurking servant with a glass eye who turns out to be Sharp's jilted girlfriend from thirty years before, and there's a virtual catalogue of Hitchcock trademarks and themes, including the entire sexual web that accounts for Sharp's warped behavior and an accompanying abnormal mother/son relationship that so often in Hitchcock leads to murder or, at the least, neurosis. The look of the film is quite nice, with color photography by Peter Jessop, and is well above average, even by British standards. The acting is very good indeed, with Sharp sulking about like the very devil, Susan Penhaligon as the currently terrorized heroine, and Stephanie Beacham, who has wisely graduated, unlike, say Joan Collins, from virginal breathless heroines to older girlfriend roles. The ending just cuts off, with the hero convincingly put off and Sharp once again taking off after Penhaligon, this time unimpeded. The abruptness implies the dominance of evil without really having to show it, usually the mistake of '70s direly pessimistic horror films.

—David Bartholomew

GAPESE GOVEMENTS

COMA [Michael Crichton] United Artists 2/78, Metrocolor, 113 min. With: Genevieve Bujold, Michael Douglas, Richard Widmark. "Crichton finally gets to play in a hospital, and performs excellent surgery on Robin Cook's bestseller about a black market in organ transplants. Ponderous exposition is lopped off, reams of text are distilled into pithy and concise dialogue scenes, and Cook's med-student obsession with befuddling technical doubletalk is rinsed out in Crichton's tight and admirable scripting. The heavy medical flavoring occasionally takes its toll characterwise—Bujold begins as an automaton rather than 'assertive,' indirectly causing a nasty thematic mid-film break in which the story must pause to illuminate her humanity—but then the super-science thriller takes over, hurtling us with Bujold into confrontations with a leering hit man, a gruesomely realistic electrocution and rampant paranoia as she delves into the ominous goings-on at the Jefferson Institute, with its alien and spine-freezing display of comatose human vegetables—the fodder for the illegal organ-running. Under Crichton's direction the technological trivia carries a money-back guarantee while rudely exposing the potential for such phenomena to overrule humans—and this film demonstrates that the human element as well will continue to seep through the machinery in Crichton's film work, a bit more each time. A competent, professional speculative thriller, sometimes cold, more often chilling, but definitely engrossing." *Dave Schow*

ERASERHEAD [David Lynch] A Libra Film, 10/77, black & white, 90 minutes. With: John Nance, Charlotte Stewart, Allen Joseph, Jeanne Bates. "Produced on a shoestring with partial aid from the AFI, this film is a true rarity: an original work that seemingly has no antecedents in the genre. It is not abstract, but it defies a coherent plot description, in fact, it defies description of any kind. It is at once shocking and funny and is deeply ambiguous, not unlike a cryptogram without clues. Produced, directed, designed, written and edited by David Lynch, the film evenly divides its time between unflinchingly describing a brutal, nightmarish,

ERASERHEAD



perhaps futuristic (or alien) world and densely parodying the kind of banality that daily surrounds us and seems to have become the end-product of civilization. Despite the budget, Lynch's special effects, including a (mechanical) beast/child and some stop-motion, are simply extraordinary, and the whole is given a strikingly absorbing quality by Fred Elmes and Herbert Cardwell's lighting and photography, probably the finest black-and-white photography done since the '40s. I am not easily given to overstatement. See this thing." *David Bartholomew*

THE INCREDIBLE HULK [Kenneth Johnson] CBS-TV, 11/77, color, 100 minutes. With: Bill Bixby, Susan Sullivan, Lou Ferrigno, Jack Colvin. "Kenneth Johnson's liberal adaptation of the Marvel Comics behemoth is a lively and entertaining piece of melodrama, better by far than the comic book itself. His new and vastly more effective origin of the Hulk is aided by Bill Bixby's convincing portrayal of Dr. David Bruce Banner, who when pumped full of gamma radiation turns into a seven-foot-tall, green-skinned Louis Ferrigno. Susan Sullivan excels as Dr. Elaina Marks, and indeed the touching but doomed relationship between Banner and Marks is a good deal more honest and affecting than seen in most straight dramatic series. Johnson proves himself an adept writer/producer/director; the first five minutes are lovely, the last five minutes are gloriously pop-tragic in the way that Marvel Comics used to be before they went down the tubes, and in between we can almost believe in that seven foot green monster." *Alan Brennert*

THE NEXT STEP BEYOND [John Newland] TV Syndication, 1/78, color, 23 minutes. With: Larane Stevens, Brian Scott. "Actor/director Newland attempts to revivify his old *ONE STEP BEYOND* series with this '70s update. Pilot episode 'Tsunami' deals with plight of young woman confined to a wheelchair, unable to flee approaching tidal wave. Some attempt at modernization—woman is rescued by autistic boy, and segment is shot in videotape—but ubiquitous narration, monotonous process shots of approaching



STAR PILOT

Big Water, sloppy pace and thoroughly predictable climax qualify this as quack nostalgia. Unfortunate because Newland has always been an interesting, if uneven, contributor to the genre—i.e. 1973's *DON'T BE AFRAID OF THE DARK*. Many of the old *BEYOND* episodes were inventive and intelligent (who can forget 'The Sacred Mushroom,' with Newland and producer Collier Young actually eating the titled fungus on-camera?), as were Newland's sporadic contributions to the equally inconsistent *THRILLER*. But this entry resolves itself as a self-ripoff—this 'pilot' is a virtual remake of an original *BEYOND* segment titled 'Tidal Wave' broadcast in 1960!" *Paul M. Sammon*

OH, GOD! [Carl Reiner] Warner Bros, 10/77, color, 104 minutes. With: George Burns, John Denver, Teri Garr. "The best case for atheism I've ever seen. Sappy TV sitcom humor hashed with naive profundities. I'm OK/You're OK therapy for the masses, who apparently enjoy being deluded. Reiner's impression of *The Picture of Dorian Gray* is neat, but hardly worth the price of admission."

Frederick S. Clarke

STAR PILOT [Pietro Francisci] Monarch 11/77(c66), Eastmancolor, 81(94) minutes. With: Leonora Ruff, Kirk Morris, Gordon Mitchell. "Earth scientists board a spaceship and blast off for the Hydra constellation; their ship is an aluminum foil miniature; during deep-space repairs, they maintain a weightlessness effect by jumping on trampolines; they land on old *PLANET OF THE VAMPIRES* sets; an alien language must be deciphered, to which one up-and-coming scholar (via the deadly English dubbing) remarks 'Sounds like Bulgarian,' the plot disintegrates after forty minutes and the director invents two or three new ones which proceed simultaneously. First released in Italy as *2 + 5 MISSIONE HYDRA*. Monarch has cut some expository scenes from the current dubbed version, which doesn't help. This film has reportedly been shown on American television, and, although the ad campaign for the theatrical version is nice, the full feature can't compete with its own trailer." *Jeffrey Frentzen*

THE INCREDIBLE HULK



SCIENCE FICTION HORROR, FANTASY

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ed on the set of DRACULA A.D. '72 at Hammer; director Robert Fuest, Vincent Price and Robert Quarry on filming DR. PHIBES RISES AGAIN.

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Producer Charles H. Schneer on his long association with Ray Harryhausen and filming GOLDEN VOYAGE OF SINBAD; Richard Matheson career interview; writer-director Michael Crichton on filming WESTWORLD; photo previews on filming at Amicus of FROM BEYOND THE GRAVE, THE BEAST MUST DIE and MADHOUSE; David Niven on portraying Dracula in VAMPIRA; THE EXORCIST feature re-

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THE WAR OF THE WORLDS Retrospect with comprehensive interviews; Jim Danforth on KING KONG and his resignation from the Oscar Academy; photo review of George Lucas' STAR WARS novelization; preview of SINBAD AND THE EYE OF THE TIGER.

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Director Brian De Palma and Sissy Spacek on the filming of CARRIE; writer David Gerrold and effects technician Gene Warren on filming LAND OF THE LOST for television; Robert Wise on filming AUDREY ROSE; Michael Winner on filming THE SENTINEL; on-the-set report of filming PEOPLE THAT TIME FORGOT; Larry Cohen on filming DEMON!; John Chambers on doing the makeup for ISLAND OF DR. MOREAU.

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Ray Harryhausen on special effects and SINBAD AND THE EYE OF THE TIGER; filming special effects for THE CRATER LAKE MONSTER; producer Paul N. Lazarus III on filming of CAPRICORN ONE; photo report on the rejected makeup for CLOSE ENCOUNTERS OF THE THIRD KIND; producer Jerome Zeitman on filming DAMNATION ALLEY.

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THE WICKER MAN, the story behind Anthony Shaffer's occult masterpiece, the CITIZEN KANE of horror films, includes interviews with star Christopher Lee, writer Anthony Shaffer, director Robin Hardy, producer Peter Snell, and many others; director David Cronenberg on RABID; producer Milton Subotsky on THONGOR.

VOL 6 NO 4/VOL 7 NO 1

Making STAR WARS, twenty-three interviews with the actors, artists and filmmakers who made it possible, with a special emphasis on the creation of its amazing special effects; Steven Spielberg and Douglas Trumbull on making CLOSE ENCOUNTERS OF THE THIRD KIND; David Allen on the model animation of LASER BLAST; Amy Irving on THE FURY.

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THE WAR OF THE WORLDS



Volume 5 Number 4

Listed at left are just some of the subjects of major articles in our past issues. From THE EXORCIST to SINBAD AND THE EYE OF THE TIGER to STAR WARS, we cover it all. Subscribe to the review of horror, fantasy and science fiction films, and receive your copies in the mail, weeks in advance of newstand distribution. And while you're at it, pick up those valuable back issues you may have missed, while they last! For your protection, all subscription and back issue copies are mailed in envelopes to arrive unmarked. Get serious about the genre and subscribe today!

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WILLIAM GIRDLER

ON THE MANITOU



William Girdler.

Thirty-year-old William Girdler, producer and director of *THE MANITOU* was killed January 21 in the Philippines, in a helicopter crash near Manila, while scouting locations for a new film. Girdler discussed his work on *THE MANITOU* in November, as he finished post-production chores on the picture, an occult thriller, scheduled for release by Avco-Embassy Pictures in February. The film concerns an ancient American Indian demon manifesting itself in a modern-day woman (6:1:29), and is based on the novel by Englishman Graham Masterton. Girdler was usually associated with low-budget drive-in quickies, such as *ABBY* and *GRIZZLY*. His involvement with *THE MANITOU* stemmed from the success of his recent film, *THE DAY OF THE ANIMALS*, his best work to date. *THE MANITOU* appears to have permitted Girdler to transcend the confines of exploitation filmmaking. His enthusiasm about the genre, and the script he wrote with actor Jon Cedar (who also plays a doctor in the film), coupled with an ample budget of over \$3,000,000, offers the potential for an exciting motion picture.

Girdler's background in filmmaking had begun with documentary work in the Air Force. His first feature, *ASYLUM OF SATAN*, was made in 1971. His work up through *ABBY* (1974) was produced in Louisville, Kentucky. His best work of this period was *THREE ON A MEATHOOK* (1973), made for \$18,000 in 35mm and color, combining heavy-handed gore with some amusing throwaway

comic lines delivered offhand by a cast of virtual amateurs. Although mere glimpses of his feature work provide an insight into Girdler's talent, the very genre that had seemingly restricted him to generally poor material offered, in *THE MANITOU*, a property of great potential for expanding upon his success as a director. Tragically, his career is now ended.

*When did your involvement on *THE MANITOU* begin?*

I was on my way to London to work on the score for *DAY OF THE ANIMALS*. At the airport in LA, I picked up a copy of Graham's book to while away the ten-hour flight. In England, I was so excited by the property that I phoned my agent from the London Airport and asked him to buy it.

I talked with Graham about the possibilities of making his story into a film. You see, Graham is English, which makes him an unlikely candidate for writing a story about American Indians. But he was encouraging about a movie project, and gave me access to background material I needed for the script. When he read the script, the things I'd changed in his book were to his liking; in fact, he even thought some of my additions might have been good in his original tale.

What kinds of changes were made?

Graham's book went to extremes that I did not wish to deal with. I treated the story uniformly as a personal ordeal for the characters directly involved with this girl. Graham brought in things like the National Guard and the New York Police Department; using devices like that tends to undercut credibility; it's like some of those science fiction films of the fifties, where battalions of men were called in to fight off invading aliens. Realism can be maintained without resorting to action that destroys the fantasy concept.

Much of the gore in the book has been eliminated. We had two choices in making the film. We could have made a drive-in shocker of immense proportions, or a class production. The story could have been done either way. I wanted to get away from the kinds of films I'd been doing up until that point. So I was able to finance about three million dollars from private investment groups not associated with the studio [Avco-Embassy]. In doing things in this manner, I will, hopefully, produce a film which is able to work better for me.

There are other minor changes to the story, mainly character relationships that needed clarification and tightening. I changed the John Singingrock character [Michael Ansara], the mortal medicine man, from a businessman to a farmer. The stricken girl, Karen Tandy [Susan Strasberg], has a closer personal relationship with the mystic detective Harry Erskine [Tony Curtis].

Were there any difficulties in producing the film independently?

The script had been written and laid out in storyboards when Avco-Embassy came in. They have really been a part of this production from the beginning. Their help got us from script, through preproduction, and before the cameras in about three months, a near-record. They offered guidance on certain matters: promotion, scripting problems, general production

*Top: Joe Gieb as the Indian Demon Misquamacas, from *THE MANITOU*, currently in release through Avco-Embassy Pictures, starring Tony Curtis, Susan Strasberg and Michael Ansara. Bottom: Makeup men Tom Burman (left) and Tom Hoerber attach the latex rubber appliances which transform Gieb into the Indian demon. The extensive makeup required five hours to complete.*

hassles, and so forth. So that preproduction time was well-used and economical.

I had a ten-week shooting schedule, beginning on May 17 through the summer. I chose San Francisco over New York City [where the book is set] to shoot the film because San Francisco is moody in a way New York isn't; the fog, architecture, very Mediterranean. There were no live interiors, though. All of the inside work was done at CBS in Hollywood.

When the film is finished, and I'm working on some post-dubbing and opticals now [November, 1977], Avco-Embassy has a neat promotional campaign worked out. I can't tell you exactly how the film will be sold, but I do know that it is to be blown-up to 70mm from 35mm Panavision and four- and six-track stereo prints will be struck [reportedly in the new Dolby optical sound process]. A lot of effort is going into the film, which can possibly be exhibited, in the tradition of *CLOSE ENCOUNTERS OF THE THIRD KIND* and *STAR WARS*, as an "event."

What sort of physical and optical special effects are you working with?

The problems with the makeup were tremendous. Tom Burman and Joe McKinney worked on the appliances, and the actor used to portray the ancient Indian demon was literally weighted-down in latex rubber. The particular makeup took five hours to put on and two to take off each day. There is a birth scene in the film, done with makeup and special effects including the mock-womb of Karen Tandy, created by Gene Griggs and Tim Smythe, which is the most graphic effect in the film. It took two-and-a-half days to film and lasts a minute onscreen. There is no blood, oozing fluids, or ripping flesh. The way it was done, complimented by Lalo Schifrin's score, achieves a weird ethereal mood.

One thing the audience will not be prepared for is the ending, which is completely different from the one in the book. My ending will leave the viewer in a state of shock. So, if you are oriented on Graham's finale, forget it. This finish is an end-all. Too bad I can't tell your readers about it. . . I'm doing some of the special effects work on the ending now, as a matter of fact. We've had problems in getting the kind of results I'd like, and it's a case of my own perfectionism. I really want to make a dent with this feature.

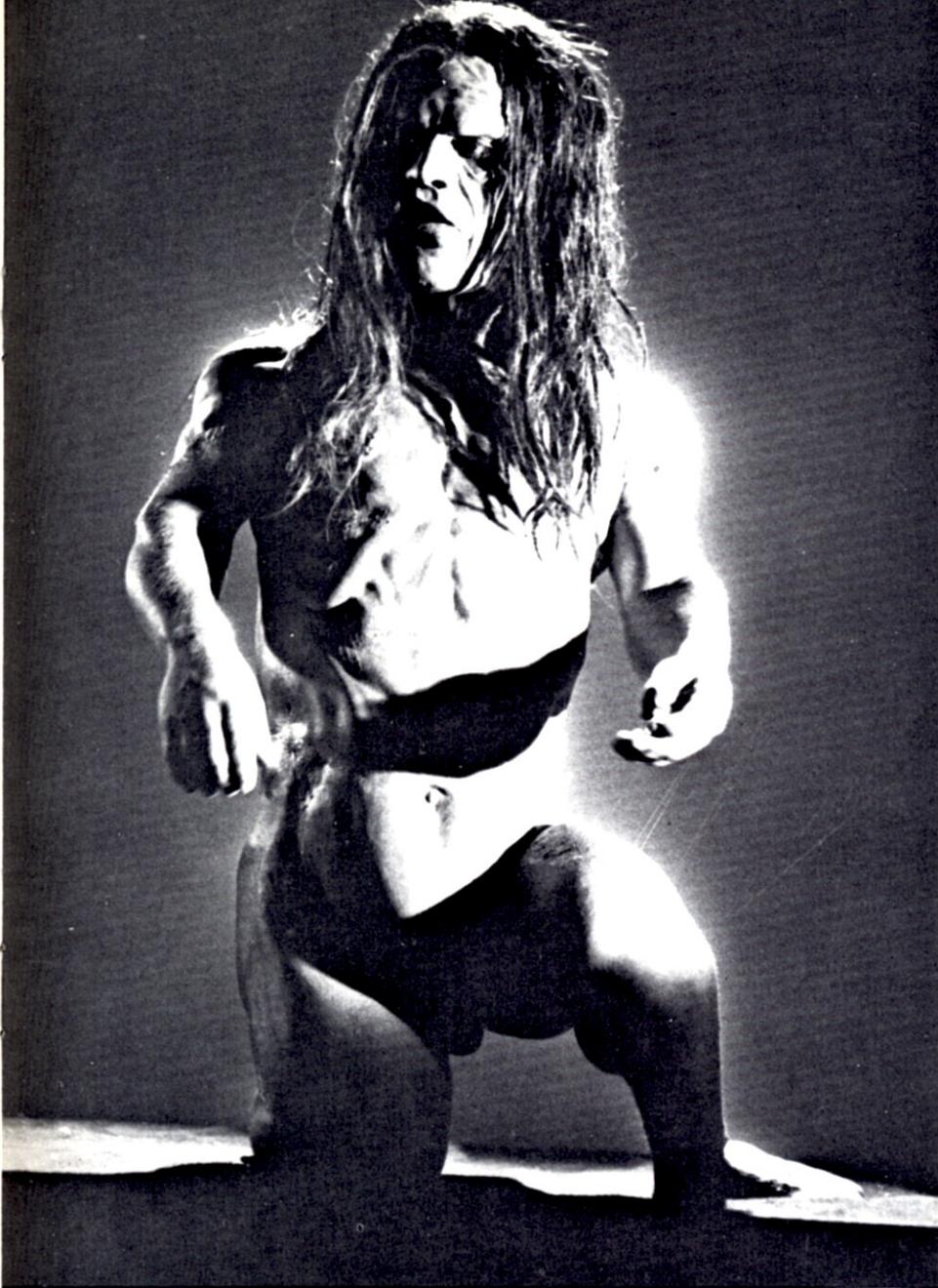
What are your future film plans in the genre?

I'm developing an idea for a science fiction fantasy called *THE OVERLORDS*. The first script for it is presently being written by Harry Kleiner [FANTASTIC VOYAGE, BULLITT], and it is not a *STAR WARS* rip-off, if that's the current fashion of things. I'd also like to get back into the action-adventure genre, and have purchased a new book titled *THE DEADLY PURSUIT*. ■

Jeffrey Frentzen lives in Orinda, California. His Retrospect feature on director Herk Harvey's *CARNIVAL OF SOULS* will appear in a future issue.

by Jeffrey Frentzen

SENSE
OF
WONDER



After my negative comments about *STAR WARS* (6:1:25), I was chided endlessly by readers incredulous that "I didn't like the film." I never said I didn't like *STAR WARS*. In fact, I called it a "unique achievement in special effects." Most irate letter writers overlooked that and also failed to address themselves to my specific criticisms of *STAR WARS*, instead complaining about the fact that I chose to criticize the film in the first place. They usually sidestepped the issue by conceding that, yes, *STAR WARS* is juvenile, yes, it is superficial, yes, it is rote repetition of every adventure film cliche of the past fifty years, yes, yes, yes—"But that's the kind of film George Lucas wanted to make, and it's fun," they chorus, a litany that supposedly invalidates all the serious flaws of *STAR WARS*, which are obvious even to rabid fanatics. After ranking me next to Ebenezer Scrooge or Harlan Ellison, they invariably sign off, "May the Force Be With You."

But wait, this type of rhetoric is likely to encourage another flood of crank letters, and I can't stand any more lectures on film as entertainment. So let me genuflect to *STAR WARS* and admit that I was *born again* in the Force and that I had *fun* watching *STAR WARS* and even saw it more than once.

I don't think there's any great gulf separating *STAR WARS*' fans and *STAR WARS*' detractors, but the rhetoric and emotionalism on both sides has polarized opinion. As a technical achievement in filmmaking, *STAR WARS* is remarkable in many ways, and the interviews featured this issue as *Making STAR WARS* attest to the dedication, ingenuity and creativity of the filmmakers involved. But technique, and in this case, special effects, is not an *end* in itself, but a *means* of portraying something worthwhile as a film. It takes a great deal of searching on my part to find anything worthwhile or interesting in *STAR WARS* *beyond* the special effects. What Lucas *chose* to film is roughly the *sci-fi* equivalent of Ray Harryhausen's stop-motion films. We wait from scene to scene for the hoped-for intrusion of a spaceship or laserblast to enliven the show. As we wait we're subjected to a lot of borrowed business, usually done far better somewhere else. I can applaud Lucas for devising some intriguing special effects sequences, but must I also applaud him for hanging them onto a pointless action storyline peopled with depthless characters?

But wait, *STAR WARS* is *fun*, so why am I knocking it? I'm *not* anti-fun. I am interested in balancing the hyper-euphoria with which the film has been received, and putting its fluke success into some kind of perspective. The social forces which make films into media events, elevating their boxoffice receipts into the hundreds of millions of dollars aren't well understood, but they have nothing to do with aesthetics. *STAR WARS* is certainly fun, but it's mediocre fun, to be appreciated in the same arch way that one enjoys the wisecracking robot and special effects in *FORBIDDEN PLANET*. I find it disappointing that Lucas felt he had to regress to that level to be entertaining. His own *THX 1138* shows that he is capable of so much more. ■

DOMINIQUE

At last, the first Sword & Sorcery film from producer Milton Subotsky and his new partner, Andrew Donally, went before the cameras at England's Shepperton Studios. DOMINIQUE is a psychological thriller with supernatural overtones about David Ballard, played by Cliff Robertson, subtly trying to drive his wife Dominique (Jean Simmons) temporarily into a mental institution so he can delve into the family funds to help out his near-bankrupt business. Unexpectedly, he drives her to suicide and in turn is driven to suicide himself by ghostly visions of her tormented soul. After many twists and turns all is explained in the denouement.

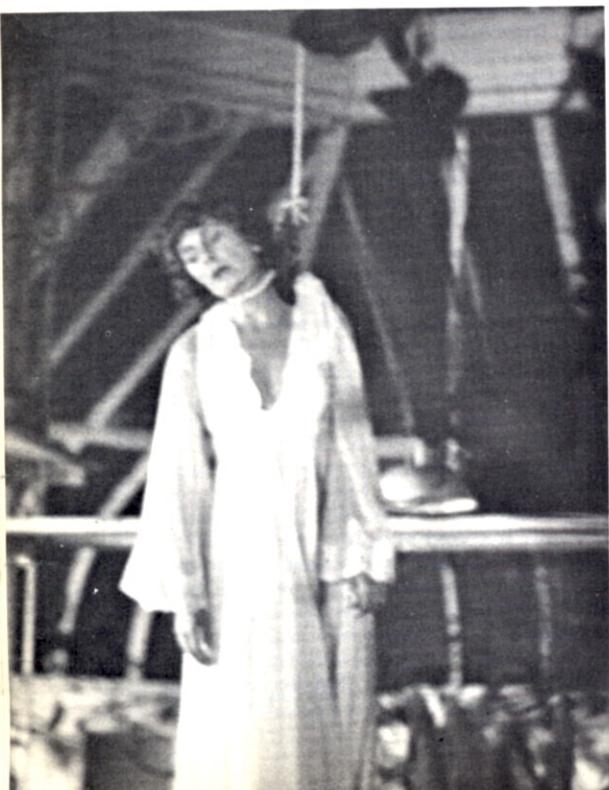
Everybody working on the film is convinced that nobody will even come close to guessing the DIABOLIQUES-type ending. In fact, when Subotsky was looking for financing, he sent producers the script with the last four pages missing and invited them to guess the explanation. Nobody guessed right.

The script for DOMINIQUE was written by Edward and Valerie Abraham from the book *What Beckoning Ghost* by Harold Lawlor. The team has supplied scripts for Subotsky's other projects, THE MONSTER CLUB and KING CRAB. Edward Abraham directed a British Film Institute short in 1962 called THE PIT, based on the Poe story, which attracted the attention of Subotsky. It is only now that a long-promised directorial assignment is about to materialize, with Abraham set to direct his own script of THE MONSTER CLUB.

Mike Childs and Alan Jones are our London correspondents, and supplied several interviews for our feature on STAR WARS in this issue.

by Mike Childs and Alan Jones

Jean Simmons.



DOMINIQUE was originally scheduled to be made in Canada but was switched to England when Shepperton quoted a lower figure, \$1,100,000 plus \$320,000 for cast, as opposed to the Canadian quote of \$1,400,000 plus \$180,000 for cast, of which half had to be French-Canadian.

Says Subotsky: "I've had the script for this picture for years. It was one of the last ones from the Amicus days, but Max [J. Rosenberg] didn't like this sort of film. It's called DOMINIQUE because I want the ads to read 'DOMINIQUE will make you shriek!!!'"

Director Michael Anderson, whose previous genre films LOGAN'S RUN and DOC SAVAGE: THE MAN OF BRONZE have hardly endeared him to genre enthusiasts, explains why he's involved in this picture, which is modestly budgeted by his usual standards. "I'm making this film because I wanted to, regardless of the budget. I saw the opportunities for leading the audience wherever I wanted them to go. The story intrigued me. In editing I'm slowing it down to add suspense and put the audience in the mood. My last pictures were really producer's pictures. On DOMINIQUE Milton is leaving me very much on my own. I also knew I could attract a top rate cast and I approached most people on a personal level. Jenny Agutter was ideal for the role of Ballard's half-sister. We have the added advantage of working together previously on LOGAN'S RUN and she was the first person I asked. Jean Simmons for Dominique was exactly right, and Cliff Robertson was so perfect in OBSESSION, he had exactly the right sort of enigmatic quality that I needed. He can say more with one look than any amount of dialogue. As for Flora Robson [THE SHUTTERED ROOM, DIE, MONSTER, DIE] she was born to play the sinister housekeeper. Using well-known actors will keep the audience guessing. One familiar name alone would focus unnecessary suspicion on that character."

Complementing the strong cast are Judy Geeson (FEAR IN THE NIGHT, BERSERK, DOOMWATCH, A CANDLE FOR THE DEVIL). "This is similar to FEAR IN THE NIGHT but a much better film. The script is good and is mainly visual which makes it different in approach."

Michael Jayston (CRAZE, TALES THAT WITNESS MADNESS) plays Geeson's husband and Dominique's best friend. "I'm doing this because Andy Donally's a friend and he asked me to, and because I love horror movies, especially the ones from the early '50s and '60s."

Simon Ward is playing Dominique's chauffeur and is making this movie hot on the heels of his recent science fiction assignment HOLOCAUST 2000, to be released by AIP as THE CHOSEN. Rounding out the cast is Ron Moody, who ironically lost the Best Actor Oscar for his portrayal of Fagin in OLIVER! to costar Cliff Robertson, who won for CHARLY. Moody plays a corrupt doctor and recently appeared as the zookeeper in Tyburn's little seen LEGEND OF THE WEREWOLF.

We talked to Cliff Robertson over lunch about doing a film so similar in some respects to OBSESSION. "This is

Scenes from DOMINIQUE, the first of Milton Subotsky's Sword & Sorcery Productions to get underway. Top: The DIABOLIQUES-type suspense and horror film features Jenny Agutter, Cliff Robertson and Jean Simmons in the title role, seen in coffin! Bottom: The film also features Simon Ward, doing a bit of grave-robbing. Sword & Sorcery Productions has an exciting lineup of horror, fantasy and science fiction films planned for the future.

different in many respects. De Palma had to persuade me to do OBSESSION and even came to England to talk me into it. With DOMINIQUE I needed no persuasion as I loved the script. It is different and I like Michael Anderson a lot. He's very stimulating and asks for your opinion all the time and is amazingly receptive to ideas. Courtland, in OBSESSION, was obsessed by a great love; Ballard, in DOMINIQUE, just wants to get his wife out of the way as he's in an awkward position."

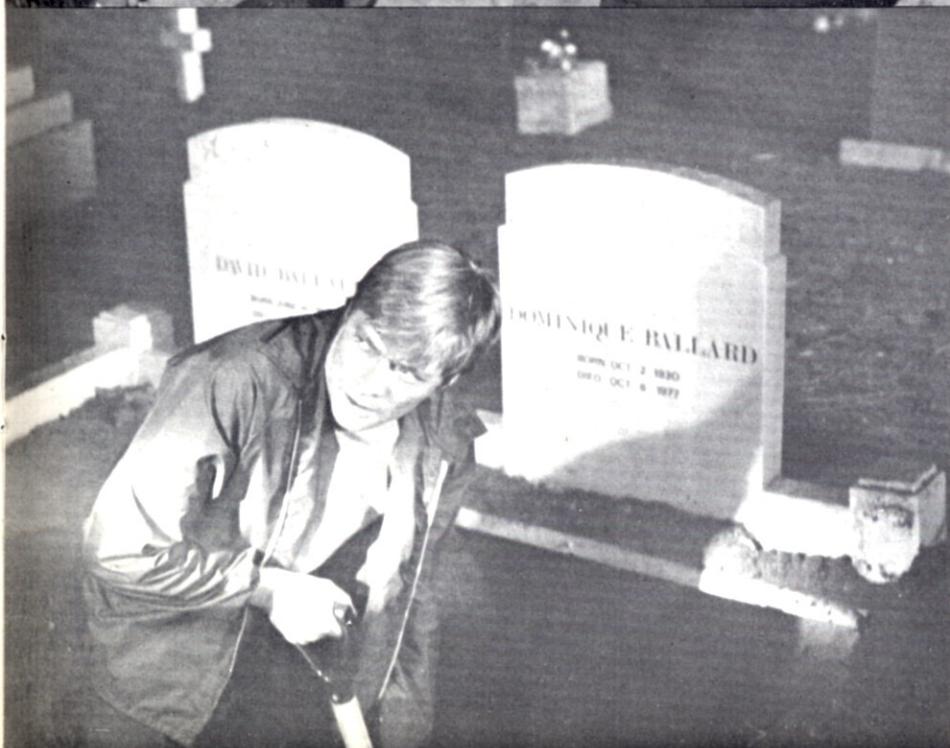
De Palma told us that one of the reasons he wanted Robertson was because he needed strong audience identification. We asked Cliff if he felt this was the same reason Anderson chose him? "I really can't answer that. I'm sure I'm just marquee value and people will associate this film with De Palma's, and hopefully go see it. I hope you're wrong, actually, or I might get offered a disaster movie and I can't stand them. I don't consider myself a 'Star' at all. I'm an ex-reporter who lucked-out and is now living a comic strip life in New York with my collection of seven antique planes."

Robertson's next movie is GOOD TIMES BAD TIMES written by James Kirkwood who co-wrote A CHORUS LINE and there is a possibility that Robertson may direct it himself. Would he like to direct a thriller? "No. I'd be very apprehensive, but I would love to be in a Hitchcock one, just to see how he does it."

During the afternoon we spent at Shepperton, we watched Michael Anderson painstakingly direct the cast on the set of Dominique's plush bedroom and listened to the music composed for it by David Whittaker, a piano rhapsody. Whittaker did the music for SCREAM AND SCREAM AGAIN.

It remains to be seen whether the film lives up to the cast and Subotsky's faith and enthusiasm for the story and its director. Says Subotsky, "I mean it when I say that Michael is the first director I've worked with where every one of his changes and ideas have been excellent. Only yesterday he came up with a better idea than mine to explain the end and I'll be seeing the rushes later on."

DOMINIQUE may sound like a weak entry in the genre, but let's hope it's successful, because Subotsky's Sword & Sorcery Productions has a strong lineup of projects for the future. Due to star in 1978 are THE MONSTER CLUB and THONGOR (6:3:28), with John Stears (STAR WARS) now signed to do the physical effects. The long-delayed THE MICRONAUTS is now in preparation under the Sword & Sorcery banner, with Michael Anderson set to direct. And Subotsky plans to provide author Stephen King (CARRIE, THE SHINING) with his directorial debut, based on one of King's own short stories.



DAMIEN—THE OMEN PART II

On the heels of the disastrous response to *THE EXORCIST* sequel (6:2:18), Harvey Bernhard, producer of the followup film to *THE OMEN*, who produced the original film as well, is unconcerned about the dangers of riding on the tail-end of a waning cycle: "Audiences were lined around the block when *THE HERETIC* opened, but they didn't get another *EXORCIST*. They got something entirely different. It disappointed the audience—they got mad, and the picture died. We're going to give 'em *OMEN II*, not something different. They're going to go and have the same fears and anxieties they had in *OMEN I*."

To make the sequel, which began filming October 12 in Israel, it will cost 20th Century-Fox \$5,000,000 to maintain the production standards set by the original, produced for a modest \$2,800,000. Inflation, combined with filming in the United States rather than England, accounts for the increase. The current worldwide box-office of *THE OMEN* stands at about \$150,000,000.

The original picture's implication that the Son of Satan would be raised by the President of the United States has been altered for the sequel. "We resolved that," Bernhard explains. "Damien's now living with his uncle, Thorn's brother, one of the wealthiest men in the world—head of Thorn Industries. He couldn't be there for his brother's funeral, so the President came—it shows the power of the family."

"Damien was five in the last one. For this one we've gone ahead about eight years. Thorn's brother is married to a second wife, Ann, and has a son named Mark by a previous marriage, who is the same age as Damien. So the two are cousins—and very close. And this is the story of what happens to Damien, and what happens to the people surrounding him, when he gets to his thirteenth birthday. In the first picture, Damien was largely unaware of his destiny. In this one he finds out who he is, and starts building his power base."

Richard Donner, who directed *THE OMEN*, was unavailable due to his *SUPERMAN* commitments, so Bernhard hired Mike Hodges (who translated Michael Crichton's *THE TERMINAL MAN* to the screen) to direct *OMEN II*. Hodges had been offered *THE OMEN*, but turned it down. Midway through principal photography in Chicago, however, Hodges was fired over a difference of opinion concerning the concept and replaced by Don Taylor, whose last picture was *THE ISLAND OF DR. MOREAU*. Bernhard has also taken on a co-producer, Charles T. Orme, who served as associate producer on *THE OMEN*, and worked in a similar capacity for John Boorman on *DELIVERANCE*, *ZARDOZ* and *THE HERETIC*.

Since all of *THE OMEN*'s principal characters, save Damien, met untimely deaths during the course of the first picture, Bernhard had to cast the sequel from scratch. William Holden, who had turned down the Gregory Peck part in the original, was signed to play Thorn's brother. Lee Grant plays Thorn's wife.

Fourteen-year old Jonathan Scott Taylor, a member of England's prestigious Royal Shakespeare Company, was signed

AMY IRVING ON THE FURY



Amy Irving.

Saturday, August 20, 1977, a wet night in the Windy City. Amy Irving, 23, is waiting for the crew to finish setting up a scene for Brian De Palma's newest thriller, *THE FURY*, in which she stars. We are relaxed in a rented Winnebago. Carrie Fisher, who is visiting Amy, is resting in the back. Carol King music softly plays. Amy is a veteran of the stage. Her extensive television work has included *ONCE AN EAGLE*, the nine-hour mini-series, and the PBS adaptation of Sherwood Anderson's *I'M A FOOL*. *CARRIE* is her only theatrical film prior to *THE FURY*. With her Lauren Bacall eyes, her unique accent, and her ethereal presence, she is not easily forgotten.

How did you get the part in THE FURY?

Brian called me one morning, "Amy, get on the plane to New York right now. Frank Yablans wants to meet you. I want you to be in *THE FURY*." I had not read the script. I'd read the book because I knew Brian was doing it. He's my friend and I was interested. It's a fourteen-year-old in the book and I thought, "Oh, well, Jodie Foster." So I didn't even pursue that. Brian had said at one point that there was a possibility. He's such a good woman's director. I would love to work with him always. And *THE FURY* has been the most challenging part. I'm glad to be challenged. I was also happy for the first time to be number one on the call sheet. Now no one can ask, "Did they cut you out of your film?" because they can't cut me out.

Do you think the script for THE FURY is better than the book?

The script is much better. I was really disappointed when certain parts were left out, but how can you film scenes of Robin [Andrew Stevens] and my character flying through the air, visiting each other? I was into the psychic aspect more than anything else, perhaps because that's what my character is all about. All that stuff fascinates me, but it's very hard to make that sort of thing work on film.

by Sam L. Irvin, Jr.

I noticed that there are two endings in the script?

They just haven't got a good ending yet. In *CARRIE* we didn't know the ending till a week before we shot it. It was the last scene we shot. All the girls were bickering over who would get to be in the last shot. Every day it changed. Then I lucked out, I got the ending.

Have you enjoyed filming in Chicago?

I want to go home! I love Chicago but I've had a grueling schedule. I ran barefoot every day last week through the streets of Chicago. I bruised my heel so I had to start running on the ball of my foot. I hurt a muscle in my thigh. I was in such pain, and here's Kirk Douglas running along side me and I thought: "If I feel this way and I'm twenty-three, Kirk must really feel it. Why won't he admit it?" Producer Frank Yablans comes over and I ask, "How's Kirk?" And he says, "Oh, he's doing sit-ups in his Winnebago." He was only kidding though, I found out later, but I believed him.

We have a shot where there's a gun firing and they're doing my close-up and you know how your body jerks? It's easier to have a gun fired than to have to reenact that. So I ask, "Can I have a gun shot?" And they'll say something like, "Sissy Spacek wouldn't need a gun shot." They're not serious of course, they're only kidding.

Kirk's been teaching me a lot. At first, I resented it. I had a very emotional scene and I was going off for ten or fifteen minutes, working myself up into this state, then getting in front of the camera and doing it. Kirk takes me aside and says, "You have the script down, you know what you're doing, so you don't need all that time to work up to it." And I thought, "My, God! I have my way of working and you have yours." I really didn't want "Lesson Number Ten" from Kirk. But then I started to really get tired, and I thought of all the things he's been saying about conserving your energy for when it's important. If it's a wide shot, don't give it all. Save it for when you have to do a closeup. I listen to him now. Everything he said was something I really had to learn. Now I ask myself, "How big is this shot? Are you really gonna see me?" If you're gonna see my body movements, I'll get into it physically. I wish I knew that two weeks ago. I might be alive today. Kirk keeps telling me, "You're going to have a brilliant career if you survive this film."

What did you do to prepare yourself?

I get hooked-up to these machines in a school scene where they read my brain-waves and I make a model train move. My alpha waves are turned into electric current. Brian had gone to check out this equipment, and they set up this meeting for me to go to this little institute and get hooked-up into it. It was kind of like in the film because I went to 90% alpha right off, and they looked at each other kind of the way they do in the film. I did an intensive course with them where I could learn how to get deeper into the different states of consciousness. I wanted to feel the sensations so I won't do phony things in the film.

How did you first meet De Palma?

I met Brian at an audition for *STAR WARS*. George Lucas was seeing people

*Scenes from *THE FURY*, currently in release from 20th Century-Fox. Top: Amy Irving concentrates her psychic powers and explodes the body of one of her pursuers. Bottom: When Irving unleashes her powerful mental abilities the field of force is so intense it causes those nearby to bleed externally.*

and Brian sat in on the auditions. George Lucas was really shy. He comes off, when you don't know him, as kind of cold. He was doing the interview and I had just come out of the hospital from an operation. I'd been laid up for six weeks and I hadn't been in an audition for a while, so I was still kind of delicate. George was asking kind of statistical questions with his head buried and I just wanted a little human warmth. I kept looking over at the corner and there was Brian. He never opened his mouth but I just really felt something. When I walked out I just knew I was gonna do *CARRIE*.

*Was there anything cut in *CARRIE* that you miss?*

They had a scene where you saw Carrie as a young six or seven-year-old and Sissy played the part. They made the fence bigger and had her behind the fence. It was incredible to watch. And they had a little girl for the back shot of her running away. They had her in these young clothes and the fence was oversized. It was hysterical. I was reading a script at the time where they wanted me to play a fourteen-year-old. I said to Sissy, "God, I can't play fourteen." And she said, "Amy, I'm about to play six! Don't give me this you can't play fourteen!"

*What did you think when Brian asked you to walk in reverse for the final scene of *CARRIE*?*

I didn't know what he was doing. It was my first movie. We shot night for day, and I just do what he tells me. I'm good at walking backwards.

Did you notice that you can see a car going backwards in the shot?

I never even noticed the car the first time I saw it. Somebody says there's a bird flying backwards?

Oh, that reminds me, some people actually thought I was a villain throughout *CARRIE*, which upsets me. They don't understand. Even when I start seeing the rope some people still think I'm in on the whole thing. That doesn't make sense. Some of the reviews I read say that I'm on the whole thing. I don't like being misunderstood, because I thought my performance was pretty clear.

How did you meet Steven Spielberg?

Brian set that up about a year-and-a-half ago, when we were doing *CARRIE*.

Who told you that?

I just heard that somewhere. I heard that you were living with Steven and his dog Elmer.

Our dog Elmer.

*Is it true that Elmer is going to play Toto in the film version of *THE WIZ*?*

Not anymore. There was a time when he was going to do that. Rob Cohen, the producer, knows Elmer. To know Elmer is to love Elmer, and he dashed that idea around, but I hear Elmer lost the part to some German shepherd or something. It's just as well, I wouldn't want him to leave home.



to play Damien. "This kid is a young Richard Burton. He's incredible. Handsome, strong, very athletic. Penetrating eyes, booming voice—just walk all over you. They just don't train kids for acting over here—maybe *THE BAD NEWS BEARS* or something—but this kid is supposed to be the Antichrist. He can't just be some schlump from around the corner. He has to be just a superior actor to be believable. And this kid can really act."

DAMIEN was shot on a twelve-week schedule, mostly on location in Chicago and upper Wisconsin, and is now in post-production. The only Hollywood studio work involved an elaborate special effects sequence. The film will be released this summer.

Depending on the success of *OMEN II*, Bernhard already has two further sequels in the mill. "In the next one, he'll be in his late teens or early twenties. And then in the fourth one he'll be about 35—on his way to Armageddon."

Bernhard's concept of Armageddon?

"I wouldn't tell you. It would give it away. But it's certainly not an atomic bomb. Fact of the matter, though, if you look hard in this one, you'll see what it's going to be."

—Don Shay

MONUMENT

MONUMENT is the project of independent producer John Flory and his Spacefilms Inc. company, based on the frequently anthologized novella of the same title by Lloyd Biggle Jr., notably appearing in John W. Campbell's *Analog I*. Flory produced documentary films in New York, worked at Paramount and was an executive at Eastman Kodak. *MONUMENT* will be directed by Flory, who has collaborated on the screenplay with Biggle.

The film concerns the struggle of a technologically unsophisticated race living on an unspoiled planet as they fight against the encroachment of a vast Galactic Empire, a contest less of brute force than of ingenuity and will. Flory has owned the film rights to the Biggle property for several years, and acquired it because he felt it offered a new direction for the science fiction film genre, an alternative to the traditional "space opera shoot 'em up or monsters from space" storyline. *MONUMENT*, however, will have extensive visual effects, specifically the presence of the Empire's vast interstellar armada. The picture will be filmed primarily in the Philippines where a new multi-million dollar film laboratory was recently constructed. Flory is investigating the use of electronic matting processes to aid in creating many of the project's elaborate visual effects. A third of the financing for the \$5,000,000 budget has been raised, but some difficulty has been encountered in obtaining backing in Hollywood, where studios seem intent on producing only *STAR WARS* imitations. Flory has also planned a series of big-budget films based on the epic James Blish *Cities In Flight* tetralogy, in collaboration with Blish. The film series would detail man's conquest of interstellar space and the formation of a Galactic civilization.

—Peter S. Perakos

GALACTICA

Shooting begins February 28 on what promises to be the biggest science fiction epic ever produced for American television. Budgeted at \$7,000,000, GALACTICA will begin as a three-hour movie to be broadcast on ABC-TV in May, with two additional two-hour sequels lined-up for production should the pilot special be a success. Universal is producing the film, and is being careful not to conjure any allusions to STAR WARS, although it appears obvious that the only reason GALACTICA is on the slate at all is due to the success of Lucas' film. John Dykstra has been named line producer, and will be in charge of all special effects to be created at his Industrial Light & Magic facility. Executive producers are Glen A. Larson and Leslie Stevens. Larson recently created ABC's HARDY BOYS/NANCY DREW MYSTERIES. Stevens was creator and producer of THE OUTER LIMITS, SEARCH and the ill-fated INVISIBLE MAN with David McCallum. Larson did the original script for GALACTICA, previously known as STAR WORLDS, and both he and Stevens are presently preparing the two-hour sequels in script form. Three other scripts are in preparation in the event ABC decides to bring GALACTICA back as a regular feature in their 1978-79 lineup of special programs.

Larson's script has a basic science-fiction storyline, but the main appeal of GALACTICA will probably stem from the special effects work. The story ambiguously takes place either in some distant future or predating mankind on Earth. Colonial planets in some far away solar system fall victim to a group of interplanetary terrorists called Cylons, who are described as "physically puny aliens without acute senses of touch, taste, hearing, or sight. They must wear a multitude of metallic costuming and electronic hardware to amplify their ability to perceive their environment." The Cylons' helmets are deliciously frightening designs

with giant slits along the facefront that sees into no recognizable face. The Cylons destroy the solar system, but a group of human colonists escape the holocaust, searching through space for a legendary "thirteenth planet called Earth." The Cylons get wind of the colonists' escape and chase after them. Refuge from the Cylons is found for the humans in a gigantic space cruiser Galactica, belonging to other human colonials. The duration of the film describes the colonists' journey to Earth in Galactica, with battles against the Cylons and other various extraterrestrial fiends. The perils described in the script are many, including a laser battle in space, encounters with a black hole, and an adventure in an alien City of Mirrors.

No cast has been signed as yet, but Stevens wants Lorne Greene to portray the leader of the human colonials. Although not yet in production, Dykstra has already completed almost all of the film's grandiose special effects, at a cost of \$1,000,000. Some of the makeups will be designed by Rick Baker and Carlo Rambaldi. Baker is reportedly working on the conception of many alien head makeups, including the evil Cylon masks. While most of GALACTICA will be shot on sound stages at Universal, some location work may be done at a futuristic-looking shopping center in Long Beach.

Dykstra, as producer, is pleased with the latitude of control he has in relation to the variety of special effects work and live-action drama. Because the lack of adequate time to prepare storyboards to be circulated throughout the production team, the instant liaison between Larson, Stevens and Dykstra, who has a conception of both optical work and story elements, cuts down on wasted time.

"Just as we used the 70mm negative format on STAR WARS, GALACTICA is being shot in 35mm for reproduction on your average television set. As well, television presents certain limitations visually

that I didn't have to worry about on a theatrical film like STAR WARS. Spaceships and detailed models have to be built on larger scale, just so the viewer can tell what they are. Perspectives also have to be simplified. Stars and starfields proportionally must be bigger and brighter; in some cases, the stars have a tendency to disappear because of the contrast element and tonal resolution onscreen. The scope of the production will in many ways rival STAR WARS in ambition, yet there is a time factor to consider. The incredibly complex shots in STAR WARS which took weeks to do, simply cannot be done in GALACTICA in light of how much time there is, although I have learned some shortcuts in effects since STAR WARS, which can be used to an advantage in GALACTICA." Dykstra concedes that, due to television's need to maximize quality of product to amount of money spent, he will employ "process photography and other trick methods to achieve the look of what we don't have on hand."

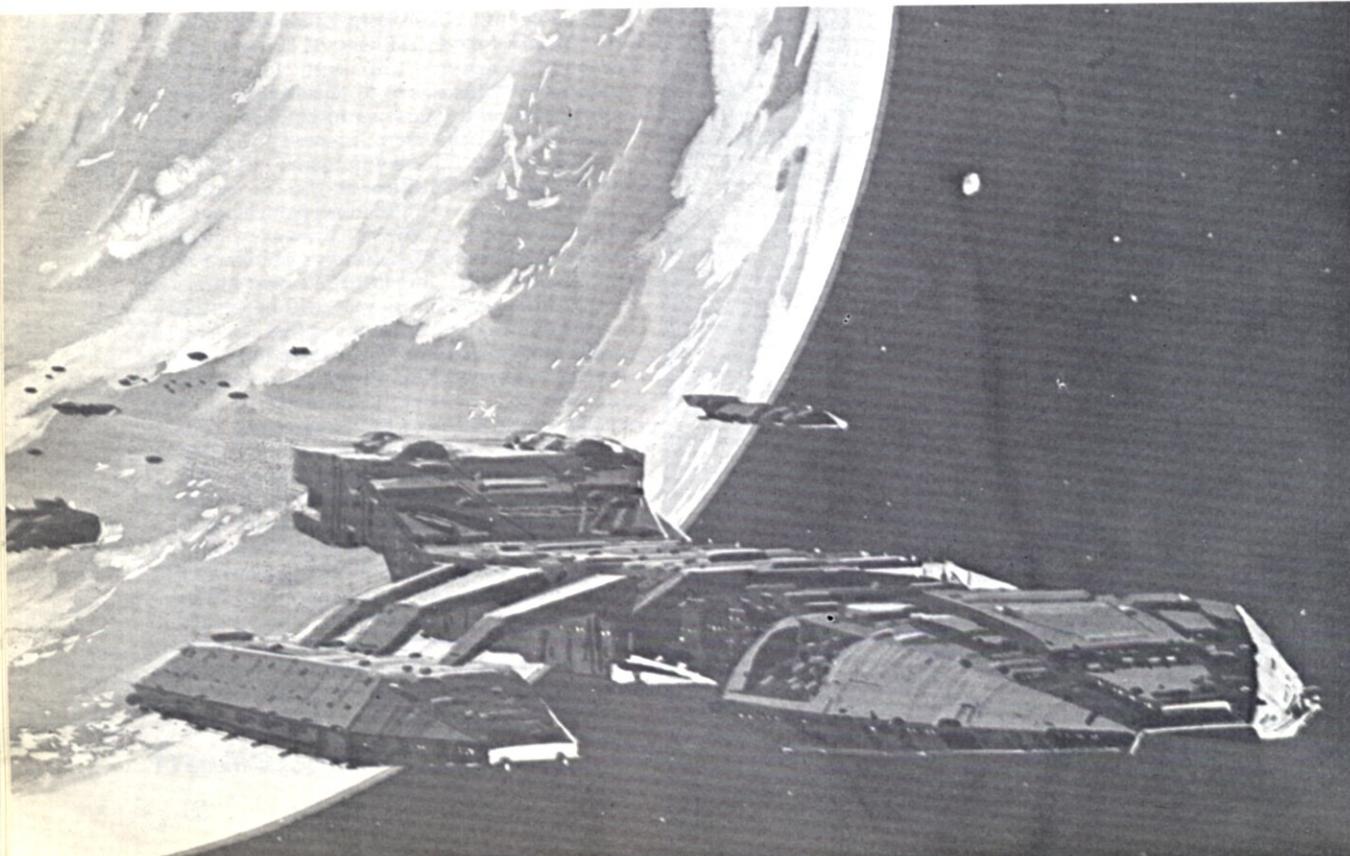
Other effects already filmed include highly complicated blue screen techniques merely pioneered in STAR WARS. His extraordinary Dykstraflex equipment and computer registration processing units will be responsible for the ultra-realistic effects. The interior control room of the Galactica cruiser will be an accomplished integration of both full-sized and miniature sets. Several special effects shots will utilize a moving camera.

Despite Universal's claim that GALACTICA meticulously avoids similarities to STAR WARS, the parallels still seem to exist. Thankfully, the studio was wise in packaging the combined talents of Larson, Stevens and Dykstra to helm the project. At least people with some idea of where to take this kind of story, with substantial technical and dramatic backgrounds and considerable taste, have complete control over it.

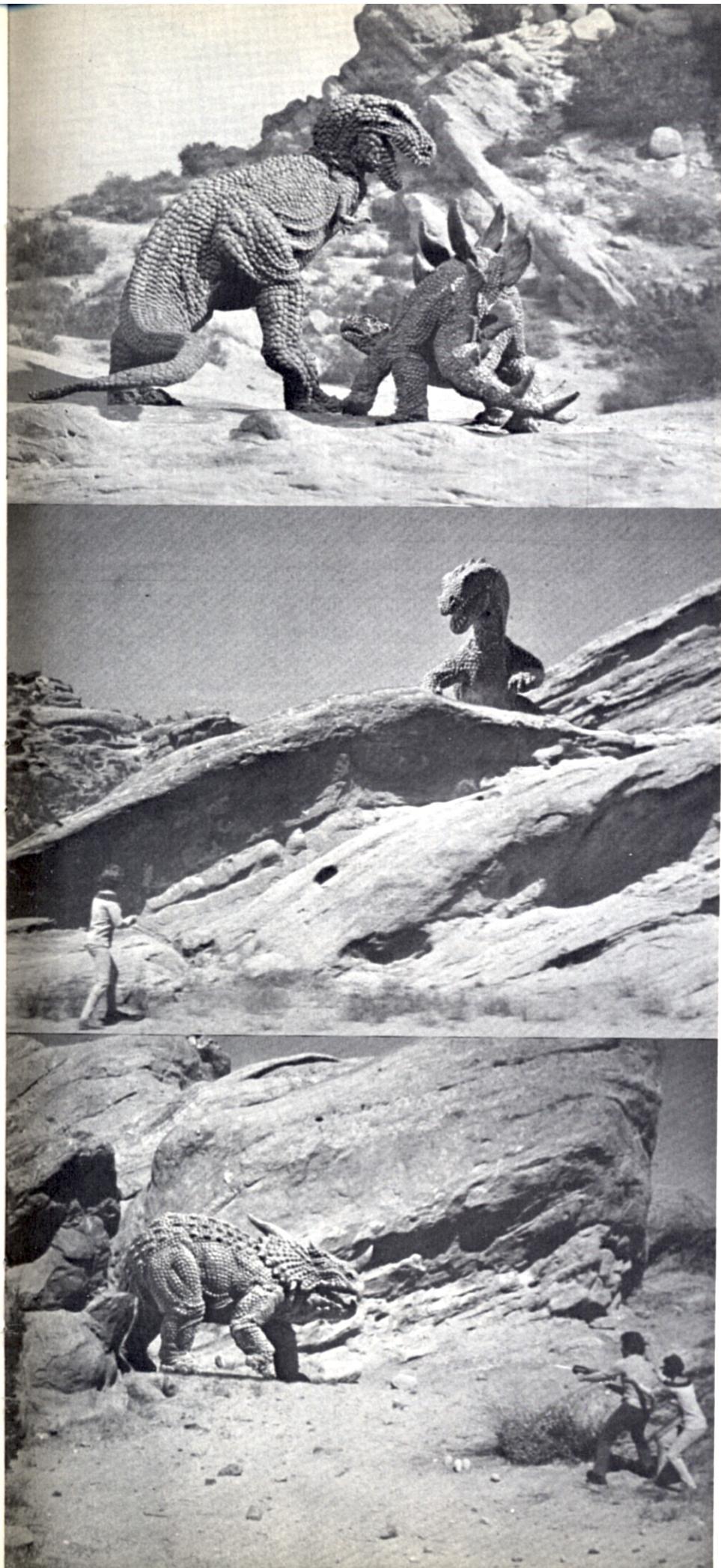
Jeffrey Frentzen & Jordan R. Fox

The space ark Galactica, one of Ralph McQuarrie's pre-production paintings for the proposed Universal television series GALACTICA.

In a related story, Universal's proposed television series of BUCK ROGERS has been placed on a "back burner" and assigned to producer Leslie Stevens for further development. Story editor David Gerrold has reportedly left the series, after writing the pilot script with executive producer Andrew Fenady and purchasing nine others from writers such as D. C. Fontana, J. Michael Reeves, Tom Swail and Dick Morgan.



PLANET OF THE DINOSAURS



PLANET OF THE DINOSAURS is in the low, low budget class, but it sports a horde of dinosaurs and a remarkable amount of animation. The filmmakers had little money, but they did have time, and spent some 15 months doing the special effects after live action photography was completed in July 1976.

The title, deliberately explicit, sums up the plot. A group of future space travelers crash lands on the planet and, with little hope of rescue, must learn to survive in an environment which is just chock full of dinosaurs, including the main villain, a delightfully toothy tryannosaurus rex. The attrition rate among the survivors is high until they learn to cooperate to defend themselves. Shunning a pat space-cavalry rescue, the film leaves them on the planet, resigned to living out their lives there.

Inevitably the film suffers from its low budget and from the filmmakers' lack of experience. It is a first feature film for almost everyone involved, and many aspects of the production are below par. As a first effort, though, it has much to recommend it.

The many and varied dinosaur models are outstanding. They were created by executive producer Stephen Czerkas, with armatures built by Victor Niblock. From sinewy struthiomimus to flabby brontosaurus (which Czerkas animated himself) they are marvelously detailed, skillfully executed lifelike creatures. The tyrannosaurus withstands closeups admirably, including shots looking right into his horrendous jaws. Though most of the dinosaurs are anatomically faithful to current paleontological theory, one is a ringer: an excellent copy of Harryhausen's famed "rhedosaurus" from THE BEAST FROM 20,000 FATHOMS which makes a cameo appearance. The majority of the animation is performed by Douglas Beswick, now working on Danforth's TIMEGATE.

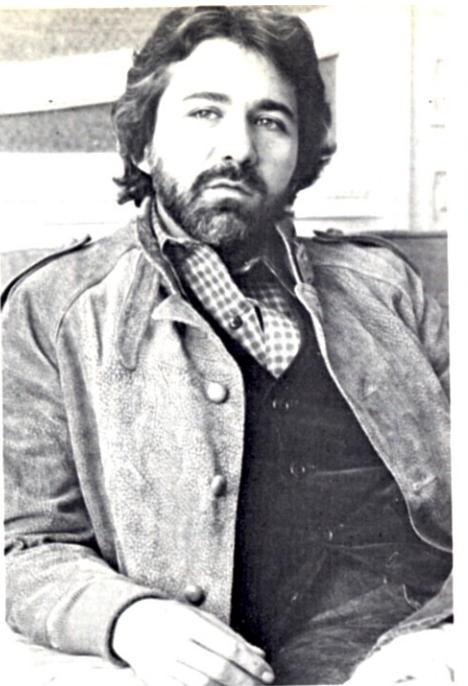
The job of composing the model dinosaurs with the live action was filled by James Aupperle, on whose story the Ralph Lucas script is based. He and Czerkas designed most of the composites. They went to the Vasquez Rocks, California, location two weeks ahead of the live action crew, picking angles and precise camera set-ups for the sequences in which the dinosaurs were to appear.

Live action, under producer-director James K. Shea, was finished in about three weeks. Then work began on the composites in the animation studio. Aupperle performed the matte work, matched the animation models' lighting and perspective to that in the live action background plates, and did color matching between miniature set pieces and background plate images. He also animated the struthiomimus and triceratops sequences. Jim Danforth provided four matte paintings for the film. No distribution plans have yet been finalized for the Cinema Dynamics production. ■

by S. S. Wilson

Top: A tyrannosaurus and stegosaurus, seen in PLANET OF THE DINOSAURS. Middle: A copy of Harryhausen's mythical "rhedosaurus" makes a brief cameo appearance as an "in" joke. Bottom: A styracosaurus.

ON COMMUNION ALFRED SOLE



Alfred Sole.

On the surface, Alfred Sole's horror film *COMMUNION* is a lurid, bloody and sensational shocker, but astute critics have seen through the, at times, incomprehensible plot and hailed a new directorial talent at work. Sole studied in Europe at the Academy of Fine Arts and Italy's University of Florence. In 1971 he won first prize at the New York Film Festival for a short entitled *DAYDREAMS*.

Sole's first picture, *DEEP SLEEP*, ran into legal problems due to its satirical pornographic content and it was due to this obscenity charge that his lawyer, Richard K. Rosenberg, became the producer of his third film, *COMMUNION*. *AMERICAN SOAP* followed *DEEP SLEEP* and Sole is now working on a fourth film, another psychological thriller tentatively titled *GRAY RHAPSODY*. We spoke to Sole on the eve of *COMMUNION* opening to ecstatic reviews in the London press. The film has been picked up for distribution in the United States by Allied Artists and has undergone a ghastly title change to *ALICE, SWEET ALICE*.

You are a self-confessed Hitchcock fanatic. How deep is your commitment to the horror/fantasy genre?

Who isn't a Hitchcock fan? I lean towards horror as it offers so many varied opportunities. *COMMUNION* is a "kill me, kill me, and have fun" picture. My next, *GRAY RHAPSODY*, is a different psychological drama with more character development. I made *DEEP SLEEP* as a start in the movies. Tax shelters were around and where I live there are lots of lawyers and bankers, so I scrounged the money, just to get started. It's been a long haul with *COMMUNION*. The film has been around for 18 months and al-

Mike Childs and Alan Jones are our London-based correspondents.

**by Mike Childs and
Alan Jones**

though we won an award at the Chicago Film Festival, we didn't make a distribution deal straight away which meant I've been in debt for some time. Columbia had the picture originally. I went to Hollywood to cut it for them, and then they dropped it. Now Allied Artists has it, which is strange, because they wanted it originally. It's only now that I feel reasonably secure and able to do what I want rather than make films like *DEEP SLEEP*.

You co-wrote the screenplay with Rosemary Ritvo, why did you want to write this particular story?

COMMUNION was made because the characters in it were people I knew. They were not murderers, but there was a real Mrs. Tredoni and a Father Tom in my life. Also, when I was little I was frightened by the statues in the church. In fact the whole ambience of a church, to me, is one of fear. I used it as a Gothic castle. The Mass is take my body and my blood, it is a sacrifice. I thought it would be a good idea to have a murder going on during the ritual Communion with those little girls, all symbolic brides of Christ. I have been accused of being anti-Catholic. That just isn't true. I wasn't making any statements about the Church. It was only that milieu I wanted to use.

Isn't the plotline just a bit too baffling for your average horror fan?

You're right, of course. I was scared to go near Mrs. Tredoni in case I gave away the story too early. It was a structural and directorial problem that I had to hope worked out. The murderer's motivation is a little woolly but it doesn't diminish the shocks.

Why is the film set in 1961?

Because the Church was at its strongest then. Catherine [the mother] being a good Catholic wouldn't have re-married. Families went to Church as a group; all the relatives would get together. And most important, the Mass was still said in Latin. I think we carried it off well. I didn't want an overemphasized Hollywood 1961. I wanted it a bit surrealistic. We screwed up over the phone booth, but we robbed it as we wanted the directory for another scene. A lot of people think the *PSYCHO* poster is a bit tacky too.

What are your feelings about using explicit blood and gore?

The way *COMMUNION* is cut makes it look more bloody than it is. You probably thought you saw more than you actually did. If that's the case then I'm pleased. It shocks, and I'm glad. I went to see a cheap mafia movie once and no one blinked at the violence, but when one of the characters spat, the audience gasped. We are so jaded toward violence these days that I wanted to say, "Hey, when you kill someone, it hurts." I purposely used parts of the body that an audience could relate to. When Aunt Annie gets stabbed in the foot, well, everybody has stabbed his toe at some stage. And when Dominick gets hit repeatedly in the mouth with a brick, a lot of people have phobias concerning their mouth. At the Virgin Islands Film Festival a child psychologist asked me if she could show the film at one of her seminars because she wanted her children to realize that violence isn't fun like it's portrayed on TV cop shows. I think I put across the feel-

Scenes from COMMUNION, retitled ALICE, SWEET ALICE by distributor Allied Artists. Top: The masked, unknown killer who prowls through the film. Middle: One of the killer's victims (Niles McMaster), stabbed, tied-up and then bludgeoned with a brick. Bottom: The grotesque Mr. Alphonso (Alphonse De Nobile) attacked by Mrs. Tredoni (Mildred Clinton).

ing of hysteria very well in those particular scenes.

The film was shot in your home town of Patterson, New Jersey. Was it purely a budgetary concern, or did you need that familiarity?

Both, really. The total budget for the film was \$400,000. We were raising funds at the same time we were shooting the picture. We had to stop at one point because the money ran out. The church in Patterson was always a great place to murder someone, so I thought. It gave me the feeling that if someone was being murdered, life goes on as usual, which is what Hitchcock puts across so well. Here we are in this office and right there in the bathroom somebody could be murdered and we wouldn't know it. I love that aspect of filmmaking and that's what *GRAY RHAPSODY* deals with. Due to a three second brief encounter at the start of the picture, the main character's whole life is ruined. Do many people realize that just by one person touching you, you affect everybody else's life? I'm very into that way of looking at life.

Isn't Alphonse De Nobile's grotesque portrayal of the fat landlord rather unnecessary comic relief in the film?

I guess so. The budget only allowed us to provide him with one set of pants, as he is obviously a big man and we had to get them special ordered. So his idea of the pee-stain went wildly over the top, but we had to let him get on with it.

The scene where Alice strangles the cat is quite strong. How was that done?

It looks like she hurts it, but she doesn't at all. It was a series of quick cuts that I thought was important. I had to show Alice was capable of doing that sort of thing, which was of course to throw the audience off guard.

There are some surprise castings in the film, Linda Miller (Jason Miller's wife), Louise Horton (George Roy Hill's wife), Lillian Roth and Brooke Shields.

I didn't have any money for a casting director, so I mailed the screenplay to the four top agencies in New York. It began to get read by a lot of people and all these people rang me up. I didn't pursue them. Estelle Parsons wanted to play Aunt Alice but the Screen Actors Guild wouldn't let her do it on a deferred payment basis until they read the script and liked it. By that time, it was too late for Estelle. But we made the first union film in history on deferred payments, as the Guild let us continue. Brooke's mother is a friend of mine, and after this she turned down *AUDREY ROSE* and did *Pretty Baby*.

*What are your plans after filming *GRAY RHAPSODY*?*

I want to write some more screenplays with Rosemary Ritvo. We have one idea at the moment, a black comedy about the Medici family. It involves lots of stabbings, poisonings and death! *

INVASION OF THE BODY SNATCHERS

An updated remake and *sequel* to Don Siegel's horror classic of the same title began shooting October 31 for producer Robert Solo on San Francisco locations. Solo and his Solo Films Inc., in an attempt to emulate the kind of production secrecy which surrounded *CLOSE ENCOUNTERS OF THE THIRD KIND*, has barred press from the sets and locations. *What* are they trying to keep secret you may well ask? The original 1956 Allied Artists film is a cult favorite and was based on the popular Jack Finney novel *The Body Snatchers*.

New film stars Donald Sutherland in the Kevin McCarthy role, a city health inspector who discovers that "pod people" are responsible for urban decay. W. D. Richter adds several new plot elements to his script, including lip-service to ecology. Spores transmit a disease through the city's water and food supply which facilitates the "pod" takeover.

Phil Kaufman directs. Kaufman's previous credits include the memorable off-beat film *GOLDSTEIN* (1963), which intermingled a documentary approach (interview with author Nelson Algren) with fantasy elements (Lou Gilbert as the prophet Elijah in contemporary Chicago). Kaufman had been announced as director on the off-again-on-again *STAR TREK* feature, and reportedly asked Leonard Nimoy to appear in *INVASION OF THE BODY SNATCHERS* as a result of their association on that earlier project. Nimoy plays a psychologist who befriends Sutherland and then succumbs to the pod menace. Nimoy's role in the film appears to be secondary, as he stayed on location only about a month before departing December 4. Shooting of the complicated effects (the pods are colorful, green devils that literally engulf their victims) is still being completed.

Also cast are Brooke Adams and Veronica Cartwright as the Dana Wynter and Carolyn Jones characters. Don Siegel, director of the original film, has a cameo role as a cab driver. Kevin McCarthy, star of the original film, also has a cameo role as the pods' first victim. One source described the opening as a modification of the ending of Siegel's film, with McCarthy running onto a busy highway, only to be struck down and killed as he screams "You're next!" At the film's end, Sutherland is the lone survivor of the pod takeover, resulting in an undisclosed "shock ending." United Artists will release late in 1978.

—Jeffrey Frenzen

Statement of Ownership, Management and Circulation. 1) Title: CINEFANTASTIQUE. 2) Date of filing: 9/30/77. 3) Frequency: quarterly. 3a) No. of issues annually: 4. 3b) Annual subscription price: \$10.00. 4) Location of known office of publication: 931 N. Lombard, Oak Park Illinois 60302. 5) Location of the headquarters: same as 4. 6) Names and complete addresses of publisher, editor and managing editor: Publisher: Frederick S. Clarke, 931 N. Lombard, Oak Park Illinois 60302; Editor: same; Managing Editor: same. 7) Owner: same as 6. 8) Known bondholders, mortgagees, and other security holders: none. 10) Extent and nature of circulation: a) total copies printed: 8167 (average no. copies each issue during preceding 12 months); 10500 (actual no. copies of single issue published nearest to filing date). 10b) paid circulation: 4032 (average); 4810 (actual). 10b2) mail subscriptions: 1482 (average); 1557 (actual). 10c) total paid circulation: 5514 (average); 6367 (actual). 10d) free distribution: 310 (average); 230 (actual). 10e) total distribution: 5824 (average); 6597 (actual). 10f) copies not distributed: 2045 (average); 3701 (actual). 10f2) returns from news agents: 298 (average); 202 (actual). 10g) total: 8167 (average), 10500 (actual). 11) I certify that the statements made by me above are correct and complete: Frederick S. Clarke, owner.



COMING



Christopher Lee as Lord Summerisle and Britt Ekland as Willow are protected from the drizzle, as the cast and crew of *THE WICKER MAN* wait for the offending clouds to pass before resuming filming.

I was delighted to see the latest issue [6:3] with its cover and coverage on *THE WICKER MAN*. Christopher Lee has spoken frequently and fondly regarding this project, and perhaps your well-written researching may be the shot in the arm it needs. I certainly hope so—and certainly appreciate the fine job you've done!

ROBERT BLOCH
Los Angeles, California

You say *THE WICKER MAN* was never released in the United States. Check your facts; get your sources straight. *THE WICKER MAN* definitely played in San Diego in '74 or '75. If that doesn't mean a "release in the United States," perhaps we should be part of Mexico?

BILL RICHARDSON
3920½ Mississippi, San Diego CA

[Actually, it doesn't. We mentioned the San Diego release you refer to on page 42. Warner Bros also opened the film in Atlanta. These openings were merely for the purpose of satisfying U.S. government tax-shelter laws and do not constitute a "release."]

After seeing in your new issue that the *THE WICKER MAN* would have its official U.S. premiere in New Orleans on October 28, I am confused. I saw the film in the first week in October in Minneapolis, at the World Theatre. The film had a Warner Bros logo and *Variety* listed it as a Hemisphere Pictures release!

I found *THE WICKER MAN* to be an exceptional film. The 81

minute version works very nicely. Definitely a first-class film which takes the genre to a new level.

MICHAEL D. LANG
Minneapolis, Minnesota

[We understand your confusion. Actually, Abraxas Films of New Orleans, who own exclusive U.S. and Canadian distribution rights to *THE WICKER MAN* were confused! They are presently contemplating litigation against Hemisphere Pictures, for their unauthorized distribution of the film. The print you saw was one of the original Warner Bros copies, provided to Hemisphere by Abraxas for viewing purposes only, when Hemisphere expressed interest in bidding on certain territorial distribution rights to the film.]

The plot of *THE WICKER MAN* is similar to that of a 1971 TV-movie called *BLACK NOON*, in which a minister (Roy Thinnes) is lured to an isolated western town, and systematically corrupted by the townsfolk (who include Ray Milland, Yvette Mimieux and Henry Silva). It turns out that they are escapees from the Salem witch hunt, who must periodically renew themselves by a blood sacrifice to Satan. The minister ends up being burned alive, while suspended by one leg, like the Hanged Man in the tarot cards.

S. WISE
Vancouver, BC, Canada

You people are not to be believed! You devote an entire magazine to one movie; you have me drooling in eager anticipation for

A LETTER FROM LORD SUMMERISLE

When Christopher Lee expressed extreme displeasure at some of David Bartholomew's comments concerning his performance as Lord Summerisle in our issue devoted to *THE WICKER MAN* (6:3:9), I encouraged him to put his objections in writing. The following is an excerpt from a generally gracious eight-page letter.

In 30 years as an actor in every conceivable medium, I have repeatedly had to bear with stoicism, fortitude, and quite frequently indifference, the slings and arrows of outrageous critics. On no occasion have I bothered to reply—it is considered unworthy that actors and actresses should demean themselves by "answering back" like the Royal Family, our lips are sealed—and it is one of the unwritten rules in our profession that the opinion of one person does not necessitate the distinction of a reply. We simply do our best with the often unworthy and frequently uninspired material at our disposal and leave it at that. Alas, it seems that all too frequently a critic cannot distinguish between an exceptional actor or actress creating an almost miraculous achievement out of poor material, sloppy production, hack direction, banal writing and barely competent photography—and a less than adequate actor who achieves virtually nothing but is fortunate enough to have the services of a fine director and crew, the immense pleasure of a really well-written part in a fine script, with excellent supporting casts, superb photography and production expertise, etc. In the one case, the dice are heavily loaded against you; in the other, everything is done for you. But which is the greater challenge and which is the greater victory? Obviously, the former.

Having spent a great deal of my career, through no wish of my own, creating something out of nothing, making the unbelievable believable, and carrying a considerable load with an almost total absence of support, I would never deny that I have often had to put "depthless characters through their paces." The fact that I have almost always succeeded in elevating these "personae" to any level of credibility at all is to my credit and should not be used as a cheap feeble excuse for a derogatory comment on my performance as Lord Summerisle. Yes, Mr. Bartholomew, I have been in some "cheap, awful pictures;" an actor has to live. Only a very fortunate few can be selective in their choice of roles, but I am fast attaining that enviable if precarious position. I am not proud of many of these pictures, but I have in no way been responsible for their quality: I have never degraded a character—I have never played a part in which I did not feel I could do something. And I am not ashamed of any performance I have given.

The reviewer's comments on my appearance as Lord Summerisle (unquestionably one of the best things I have ever done by

universal agreement) being "suspicious" are patently absurd. Summerisle is definitely suspect, no matter who plays him, whether it be myself or member of the current East End of London School or East side of New York crop of actors; whether he be played by a theatrical Knight (or Dame) or a prominent member of what I call the British Repertory Company (always the same in every performance). But I am the actor concerned and I was the actor chosen: the presentation of the character, who is indeed a villainous but also charming "persona," was the one decided on by the author, producer, director and myself and is undoubtedly the correct approach. If I should appear in one shot looking "furtive," it is with very good reason: I have no desire to be the sacrificial victim next year and I am concerned that Howie's comments may be striking home to my "flock."

As to Summerisle looking "ludicrous" in the procession, I would defy any actor in the world not to look so, if wearing trousers, sneakers, an old lace dress, a chalk white face and a long black artificial wig. It is obvious that I should look ludicrous—even ridiculous—as it is all part of the traditional pattern of the dance and the sinister meaning behind the apparently jolly revelry connected with the pagan fertility rites. It is made all the more meaningful by the apparent absurdity of the leading figure (which is incidentally explained quite clearly in the film).

I know what author Anthony Shaffer intended: he is the final judge, and he and the real makers of the film were entirely satisfied with my appearance and characterization.

It is because I feel so strongly about this remarkable film that I have broken a 30 year silence as an actor. A critic is certainly entitled to his opinion (when backed up by qualifications), but Mr. Bartholomew's comments regarding my casting as Summerisle, whilst they are undisputedly his own, are rendered wholly inappropriate and totally irrelevant by delivering cheap comments about any other films that I have been involved in over a very long and not unsuccessful career.

Congratulations again on your dedication and devotion to this film—your magazine will be of enormous help. The Wicker Man thanks you is his magical way—and so do I and all his admirers.

CHRISTOPHER LEE
Los Angeles, California

The official U.S. premiere of *THE WICKER MAN*, October 28 in New Orleans, was cancelled. Plans for the gala, celebrity event are now being finalized for this spring. However, *THE WICKER MAN* did open in test engagements at the Meadowbrook Cinema 6 in Jackson, Mississippi, November 11, playing for two weeks, grossing \$5478 and at the University Cinema in Baton Rouge, Louisiana, November 18, playing 33 days, grossing \$15,926.

its release; then, you tell me that it may not be released at all! And, if it is, it'll only be a shortened version, unworthy of the original story. Why did you build me up only to let me down? I'm in anguish here!

Let this be the first letter in a popular demand movement for a full-length showing of the original version of *THE WICKER MAN*.

WAYNE VELASQUEZ
66 Darcy St, Newark NJ 07105

[As a balm to film buffs everywhere, *Films Inc.*, the world's foremost distributor of 16mm films, is in the final stages of negotiating for the non-theatrical distribution rights to *THE WICKER MAN*. *Films Inc.* plans to make every effort to insure that their release prints will be the full 102 minute version. Contact your nearest *Films Inc.* branch for further details.]

Your preview of the *CLOSE ENCOUNTERS OF THE THIRD KIND* alien subjects was fantastic! [6:2:34]. As a followup, and for your interested readers, the photos are of the rejected work as stated. However, The Burman's Studio, Van Nuys, California, did fabricate and complete the accepted makeup and design concepts for the subject filmings.

SANDRA BURMAN
The Burman's Studio
Van Nuys, California

Your remarks on *STAR WARS* [6:1:25] were 100% right on target. Most film critics seem afraid to say anything bad about that film. The only other negative comment I saw on the film was Ben Bova's letter in *Time* which said: "Those of us who work in the science fiction field profes-

sionally look for something more than Saturday afternoon shoot-'em-ups when we go to a science fiction film. We have been disappointed many times, but I had expected more of Lucas. Somebody Up There likes the film, it seems, and no dissenting views are allowed. Too Bad." Quite right.

DENNIS COLEMAN
727 Bonsall, Sharon Hill PA

[*Mr. Bova is editor of Analog, the leading science fiction magazine in the field. The letter you mentioned was his response to being misquoted in Time's previous issue, in which they made it appear as if he liked the film. Time, with its hype of Kubrick's BARRY LYNDON, De Laurentiis' KING KONG and now STAR WARS, has lost all credibility.*]

While your "Sense of Wonder" [6:1:25] is tempered by its realization that *STAR WARS* is mostly surface, I hope you will devote a page or so to a darker drawback. I am referring to the fact that significant, in fact pivotal elements are stark plagerisms of the late master of space opera E. E. "Doc" Smith's magnificent "Lensman" saga, in particular the latter sequences of both, where the monster artificial battle satellite and "Guardians of the Force," are so obviously stolen from Smith. There is not even room for the old excuse of subliminal influences. I'm surprised somebody hasn't successfully obtained an injunction already, it's that obvious, unless nobody cares anymore. Perhaps the worst result of this is that no matter how much money becomes available to finance science fiction as a result of *STAR WARS*, the *Lensman* saga itself, probably the ultimate of the genre, will now have absolutely no chance of ever being filmed.

ROBERT M. BARRITT
RD 3 Box 166, Bellaire OH 43906

[*Certainly STAR WARS shows the influence of Smith, but so does every space opera ever written. Smith perfected the space opera in the same way Dumas perfected the historical adventure yarn, but he doesn't own the genre. The differences between STAR WARS and the "Lensman Saga" are at least as striking as the similarities.* S. W. Schumack]

While I might commend the editorial courage it took to come out against *STAR WARS* [6:1:25], easily the most popular fantastic film since 2001—both with the general public and the fans—I was surprised at the direction your criticism took. You seem intent on taking facts and altering them to suit your own opinions. For example, you stated that "Lucas has wisely avoided calling his film science fiction," which is certainly factual, but you go on to imply that the director is doing so solely to defend his film against criticism in an attempt to cover up shortcomings you feel exist within it. Lucas' previous excursion into sf, *THX-1138*, admirably displays his talent in both writing and directing an "intellectual" sf film. This should dispel any doubt that Lucas is capable of fashioning exactly the type of film he wants.

RONALD V. BORST
Matamoras, Pennsylvania

[*Directors are notorious for playing "label" games with the genre, mostly for very insecure reasons. In my opinion, Lucas was apologizing for STAR WARS before it ever hit the screen. The fact that he is capable of THX 1138 is what makes STAR WARS such a disappointment.*]

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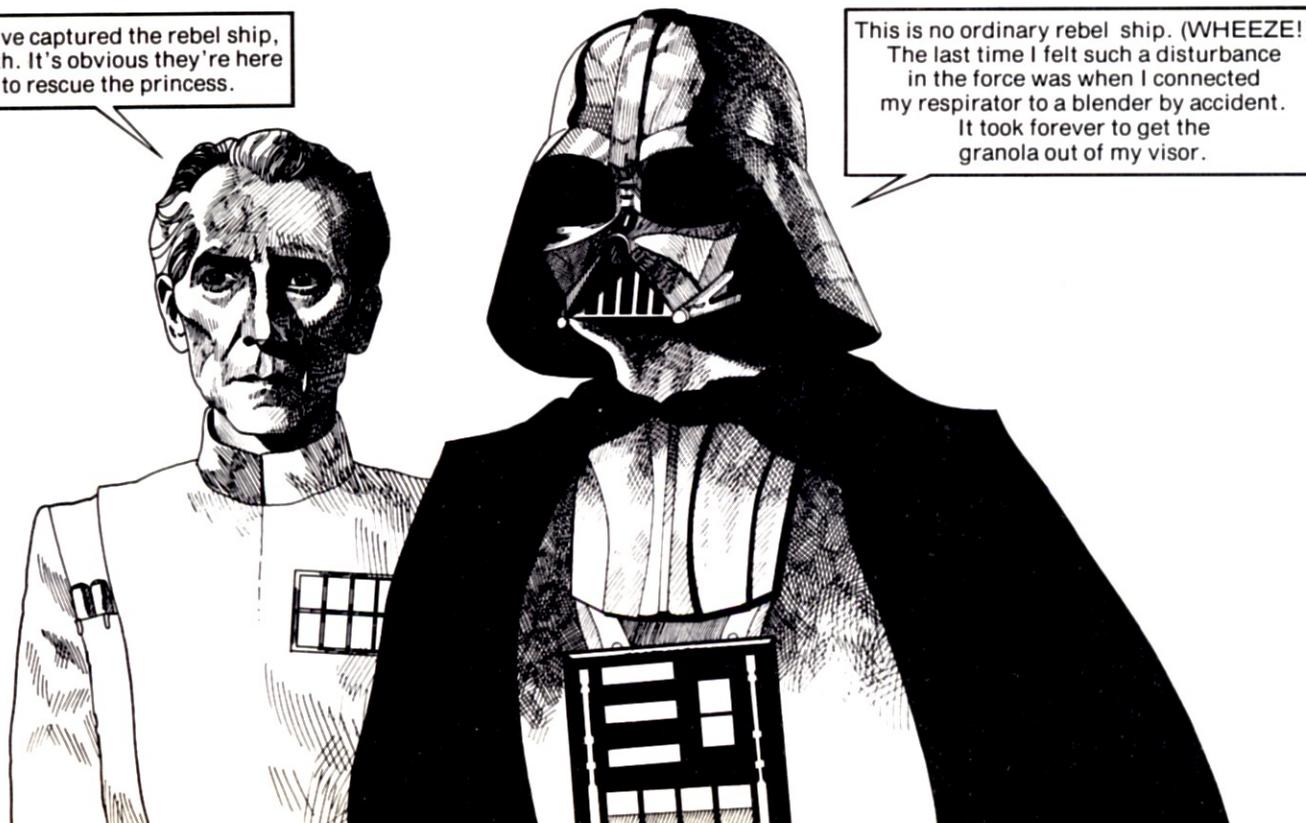
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PETER MAYHEW

Chewbacca

Peter Mayhew was born May 19, 1944, in Barnes, London. After schooling, he worked for a wholesaler of electrical supplies, and then became a porter at King's College Hospital, at Denmark Hill, London. The 7 feet, 2 inch tall Mayhew eventually rose to the rank of Deputy Head Porter before his great height came to the attention of producer Charles H. Schneer, who cast him as Minoton in SINBAD AND THE EYE OF THE TIGER, the beginning of a whole new career.

Was your role in STAR WARS a direct result of your part in SINBAD AND THE EYE OF THE TIGER?

My "acting" career started with a newspaper article. When I was at King's College hospital (London), a reporter came down to do a story on me. He was writing an article on big feet for the *Guinness Book of Records*. He had seen me walking around and thought I'd make good copy. It attracted the attention of the producers of the Sinbad movie and they asked me if I would be the Minoton and as I knew my height would come in useful for some purpose I jumped at the opportunity. A lot of

**INTERVIEW BY
MIKE CHILDS & ALAN JONES**

Peter Mayhew as Chewbacca.



the crew on that film would eventually find themselves on STAR WARS and I'd got to know them really well. One of the makeup chaps forwarded my name to Gary Kurtz when he found out what they wanted for the movie. Chewbacca was the only part I was offered and I took it. The Sinbad movie was just movement, so I preferred the Chewbacca part as it involved more. But I don't consider myself an actor at all.

What about the fame the role has brought you?

I didn't realize it would sky-rocket the way it has and I certainly don't consider myself famous at all. I like people not knowing who I am when I walk down the streets, apart from the obvious stares because of my height. That's perhaps why I enjoyed the part so much because I could lose myself in the role. I'm quite a shy person really, but once in that suit, like I did again recently on THE DONNY AND MARIE SHOW, I can blame any mistakes on that alter-ego.

Were there any problems with the costume you wore?

Just extreme heat. It was a one piece suit with a zipper up the back, knitted out of yak and mohair. The mask was fibre-glass which had been cast from my own face. There was no trouble there as it was all ironed out in the planning stages. I could move easily and I soon got used to the heat. In the garbage disposal scenes there was a ridge built on the set which I stayed on as they didn't want to get this expensive suit wet and dirty.

The noises emanating from my lips I'm not too sure about. I did them and they were recorded but I'm not sure if that's me on the soundtrack. The early scenes are definitely me, I think. Nobody has said anything though and it's too long ago to remember now.

What about your relationship with your partner, Harrison Ford?

We had a good working relationship, more than a friendship. I don't think anyone got on that well with him as he really isn't that sort of person. I can get on with most people and we had a job to do.

Did George Lucas give you much direction?

A fair amount. He'd say "Chewie, I want you here." He always called me Chewie. But a lot depended on what we were doing and where. I preferred the studio scenes to location as I liked the sets and I did not feel so alienated from my surroundings.

What is your opinion of the film?

I'm not a science fiction fan but I love adventure films and I loved it. I've seen it four times now and I still see things in it that I missed before. Some of the battle scenes especially make me think that I never even did them. I can't remember them being that good. Of course, that's due mainly to the fact that we didn't see the special effects to go with them. We thought the finished movie would be good, but not that good. When I saw the boxoffice returns from the States it really shook me.

What about the sequel?

I've been asked to do it and I think they want a tribe of Wookies in the next one. At the moment it's still an idea. In the first script there was a scene of me with my family, but in the script modification that was thrown out and it was never filmed. ■

CARRIE FISHER

Princess Leia Organa

Carrie Fisher is the daughter of actress Debbie Reynolds and singer Eddie Fisher, born October 21, 1956. Prior to accepting her role as Princess Leia in STAR WARS, she had appeared in SHAMPOO with Warren Beatty, and studied acting in London at the Central School of Speech and Drama. Also a singer, Carrie appeared on the London stage with her mother. She is now considering a number of film offers that will take up to the Winter of 1978, when she will resume her role as Princess Leia in STAR WARS II.

Do you like science fiction movies?

I'm no buff, but I like movies like THE DAY THE EARTH STOOD STILL and FORBIDDEN PLANET—silly ones too, like THE TIME MACHINE.

Did you have a lot of competition for your role as Princess Leia?

Yes, a lot. Everybody from sixteen to twenty who could look sixteen. It was a lot of people. They never wanted any names though because they didn't want people to say "Oh yeah! Nick Nolte is Luke Skywalker, right." The characters had to be believable. This was of utmost importance. George interviewed about four hundred girls and tested fifty of them.

Did you like the script as soon as you read it?

Oh yes, it was a great script, very detailed. George calls it the most expensive low budget picture ever made, because they had to plan every shot. Everything had to be in that script. Once shooting commenced they couldn't waiver from it. Every shot you see in the movie is in the script, including the effects.

What guidelines did Lucas give you?

"Faster and more intense." Those were his actual directions. At one stage he lost his voice and we joked about getting two boards fixed up each with their own horn on top and "Faster!" chalked on one and "More Intense!" chalked on the other. He also told me to stand up straight a lot and act more like a Princess.

Do you think you contributed to your role as much as you would have liked?

George didn't really have the character well defined. He gave me a lot of freedom and responsibility. The first day I met George he said that I could change any dialogue that I felt uncomfortable saying. In fact, I changed very little. Now when I see

**INTERVIEW BY
MIKE CHILDS & ALAN JONES**

Mike Childs and Alan Jones are London-based correspondents.



Above: Carrie Fisher's chasm-jumping feat on the Death Star with Mark Hamill. [Right photo copyright ©1977 20th Century-Fox Film Corporation]

how I said a lot of it, I wish I'd changed more. But that's me just being strict with myself. The only thing you couldn't tell from the script was the style and that was one thing that George communicated really well to all of us. For example, he wanted the dialogue read straight. Like: "I thought I recognized your foul stench, Tarkin." Not thrown away like I was originally going to do: "When I came on board, you know, I thought, the smell, who is that?" George didn't want us to cheat like that. Go for broke... and I went for broke.

Was it always the intention to go for a juvenile fantasy approach?

George wanted to do a film he wanted to see. George and Gary Kurtz picked up a newspaper one Sunday to go see a movie and there was nothing that they wanted to rush out and see. They decided there just weren't any good pictures around—Flash Gordon if you will, Robin Hood if you won't. But at least STAR WARS has everything in it. George at one stage tried to buy the rights to the *Buck Rogers* series and *Howard The Duck*, but they all wanted too much money, so he made his own.

The chemistry between you, Ford and Hamill works superbly. Was this hard work or natural?

George cast an ensemble piece, the three of us together. Apparently there were another three in case we didn't work, but at no time would it have been mix and match. We didn't get along just like that. We carefully psyched each other out. Harrison used to yell at me for not being able to decide where to eat and Mark and I used to sing TV jingles together... but with suspicion. It took us about a week to decide exactly what George saw in the three of us together.

You didn't use a stunt girl. Were there any particularly dangerous scenes?

The chasm crossing was thirty feet and what is so annoying is that ultimately you can't even see that it is me. We only did that scene once and Mark and I were really

scared. If we'd done it again it would have been more fun, but we were frightened that we'd splat against the wall and they'd have to bring in Robby Benson and Jodie Foster! The garbage disposal scene was fun for two hours and then it got hot and boring. We were wearing wet-suits under our outfits. Peter Mayhew [Chewbacca] just fried up in that suit.

What was the most difficult scene for you to shoot?

It was all difficult really. Acting is pretending. You have to use points of reference like an unhappy love affair and that sort of thing. Well, I don't know what it's like to watch a planet which is my home being blown up. The fact that all I'm looking at is a chalked circle makes it worse. Also, you're under tremendous pressure. It's not just a case of fluffing your lines but that the sets have to be repaired and explosions re-rigged and anything damaged replaced for the re-take.

STAR WARS II originally was going to be a different story with a different cast. Why the change of mind?

Mainly because everyone has become fond of these characters. It's further adventures of, not a sequel. We start filming at Elstree after Kubrick's THE SHINING. We had a joke at one stage that the next film would start up as we resumed bows after the presentation of the medals in the first film.

How do you want your character to develop in the next film?

Well, I could marry Luke, but if I married Han I think that would be more interesting, more so from the point of view that we were always screaming at each other. I can also say that I never want to wear those hairy earphones again. I also don't want Leia to be so straight next time. Not helpless, or victimized, but the sort of girl who loses her passport on the spacecraft.

When did you see the completed film for the first time?

I watched the scoring in London, but I didn't see all the special effects until a week before it opened in the States. Even though I was so close to it I could see and feel the magic it produced. I didn't know then that audiences would agree with me.

KENNY BAKER

Artoo-Detoo

Kenny Baker made his film debut in CIRCUS OF HORRORS in 1960, playing a clown, while employed in Billy Smart's Circus. His small size, only 3 feet 8 inches tall, made him uniquely suited for the part of R2D2 in STAR WARS. Born August 24, 1934 in Birmingham, Baker joined a touring variety act called "Burton Lester's Midgets" at the age of 16, and has been in showbusiness ever since. In 1960, while playing Dopey in "Snow White and the Seven Dwarfs On Ice," he met his current showbusiness partner Jack Purvis, a dwarf. Together they formed a musical-comedy act called "The Mini-Tones," and have performed in Britain, Europe and North Africa. Following STAR WARS, Baker appeared in Gene Roddenberry's SPECTRE and starred in the film WOMBLING FREE, which also features the debut of his charming wife Eileen.

How did you get the part of R2D2?

I think an agent of mine got wind of it and found out they were looking for a small guy. They offered me the part, but when I work I have to consider my part-continued page 90, column 1

**INTERVIEW BY
MIKE CHILDS & ALAN JONES**

Kenny Baker (left) and his partner Jack Purvis, who played the Chief Jawa in STAR WARS, form a musical nightclub act known as "The Mini-Tones."



JOHN STEARS

Special Production Mechanical Effects Supervisor

"The opticals were well-done, but the money was on the floor with the artists. That's where no mistakes can be made. An optical can be done over and over again. Everything worked first time on the set of this picture."

John Stears was born in Buckinghamshire in 1934. He started his career as a model maker in 1956 on the Kenneth Moore film REACH FOR THE SKY, building a miniature of a Bristol Bulldog biplane. He won an Oscar in 1966 for his work on THUNDERBALL. His work on other fantasy films has included CHITTY CHITTY BANG BANG, Jacques Demy's THE PIED PIPER, the disastrous Val Guest film TOOMORROW, and preproduction on PHASE IV. He was a matte artist and did stop-motion animation for the Rank Organization in the fifties. Recently he has done effects on the mood films for the rock group Yes and worked for EMI on an entertainment complex in the English resort of Blackpool. Stears is currently involved in launching the long-postponed production of VAMPIRELLA, now under the title of STARLOCK, for producer Jean-Pierre Bogner. With director Gordon Hessler, Stears co-wrote the second-draft treatment for the film which has been turned into a final screenplay by Leon Griffiths. John Stears is reputed to be the highest paid special effects man in the United Kingdom.

How did you become involved in STAR WARS?

Straightforward, really, I was the first British technician signed for the project, even before John Barry [the Production Designer], and I started on August 1, 1975. The schedule was a February start and ev-

erything had to be ready, like the robots for the location in Tunisia.

What guidelines did George Lucas give you to work on?

We had superb production illustrations by Ralph McQuarrie, and as you know the film adhered closely to them. A lot of the credit is due McQuarrie, as the look of the picture was due to him. I'm not putting down John Barry at all. He implemented those illustrations superbly.

George Lucas knew exactly what he wanted and how he was going to direct it, which made my job so much easier. There was a time, for example, when John Barry had to tear down an exterior because it wasn't the way George had envisioned it. That cost money, of course, but the budget was never a problem. Gary Kurtz saw to that side of matters. We didn't waste money either. If the film had been made in the USA they would have built everything from scratch, whereas we scoured scrap and junk heaps to get what we wanted. It was all the more production value for John Barry.

Was the idea of a "used" future your idea?

No, it was George's. He was very strong on that point. We sat through a lot of movies to get that basic feeling. We saw westerns, classics and would you believe, FELLINI SATYRICON? We were also shown THX 1138, but I didn't like it—too depressing. That isn't the George I know.

One of your contributions to the film is the Light Sabre. How did you achieve this as a physical effect?

It was in one of the sketches and George had no idea how to do it. An optical effect would inhibit the actors as they wanted to fight with a sword in the hand. I devised a spinning sword. It had a lot of flat sides, some were coated with a reflective material and the other sides weren't, which when spun achieved a stabbing forward motion in conjunction with a light fixed on the top of the camera. This was photographed through a half-silvered mirror, on the nodal point of the camera so the full value of light was in the lens from the reflective surfaces. It didn't look much if you were an inch away from the camera eye, but through the lens it looked like how you see it on screen. In fact, we saw the rushes to this scene the next day. With an optical it would have taken weeks to see the results. The effect of the light beam emerging from the sabre base was due to camera angles and the sword just starting to revolve. I work with very few opticals. I like to do things in one hit for obvious reasons.

What was the Hovercar?

A much modified framework built on top of a Bond Bug chassis, a little three-wheeler car, a bit like a bubble car, built of fiberglass and very light weight. It was the smallest thing you ever saw, as it had to be cut down quite a lot. The body shell was molded fiberglass.

And the Jawas' land vehicle?

The long shot was John Dykstra's miniature. The close-ups in Tunisia were the responsibility of Dick Frith. I brought it to life by steam effects with the aid of solenoid valves. What I had in mind was a nuclear powered steam vehicle.

And the little black box robot that gets frightened by Chewbacca on the Death Star?

That piece of action was a "one-off" I

INTERVIEW BY MIKE CHILDS & ALAN JONES

Mike Childs and Alan Jones are London-based correspondents who regularly cover English-based films in production.

"On the subject of robots, before the film started, I went to professor Thring at St. Mary's University for advice. I told him my problems and he was very interested until I told him I had five months to do it in. Well, he threw me out saying I was talking about a twenty-year project."

—John Stears

subscribed to the picture that wasn't scripted at all, just something I built for the fun of it that found its way into the picture. It works really well though, doesn't it?

What was your major problem?

The Artoo-Detoo models, of which there were two. Kenny Baker had to have a machine that worked for him. It wasn't as simple as placing him in a souped-up tin can. He couldn't move fast and it had to be balanced and properly sprung so the one leg came up as the other came down. The second model had to move fast and dip its third leg. That was the problem, the mechanics in this model and making it look like Kenny's model, as it was jam packed with equipment. The first time it had to work was on film and it was perfect, no hitches. There were problems in Tunisia because strange radio transmissions emanated from the sand, static, etc. But that was just a case of lengthening the aerial.

On the subject of robots, before the film started, I went to Professor Thring at St. Mary's University for advice. I told him my problems and he was very interested until I told him I had five months to do it in. Well, he threw me out saying I was talking about a twenty year project. However, I did it. As much as possible, I like to talk to people who have researched the subject I'm working on. It saves time and gives me a distillation of their knowledge.

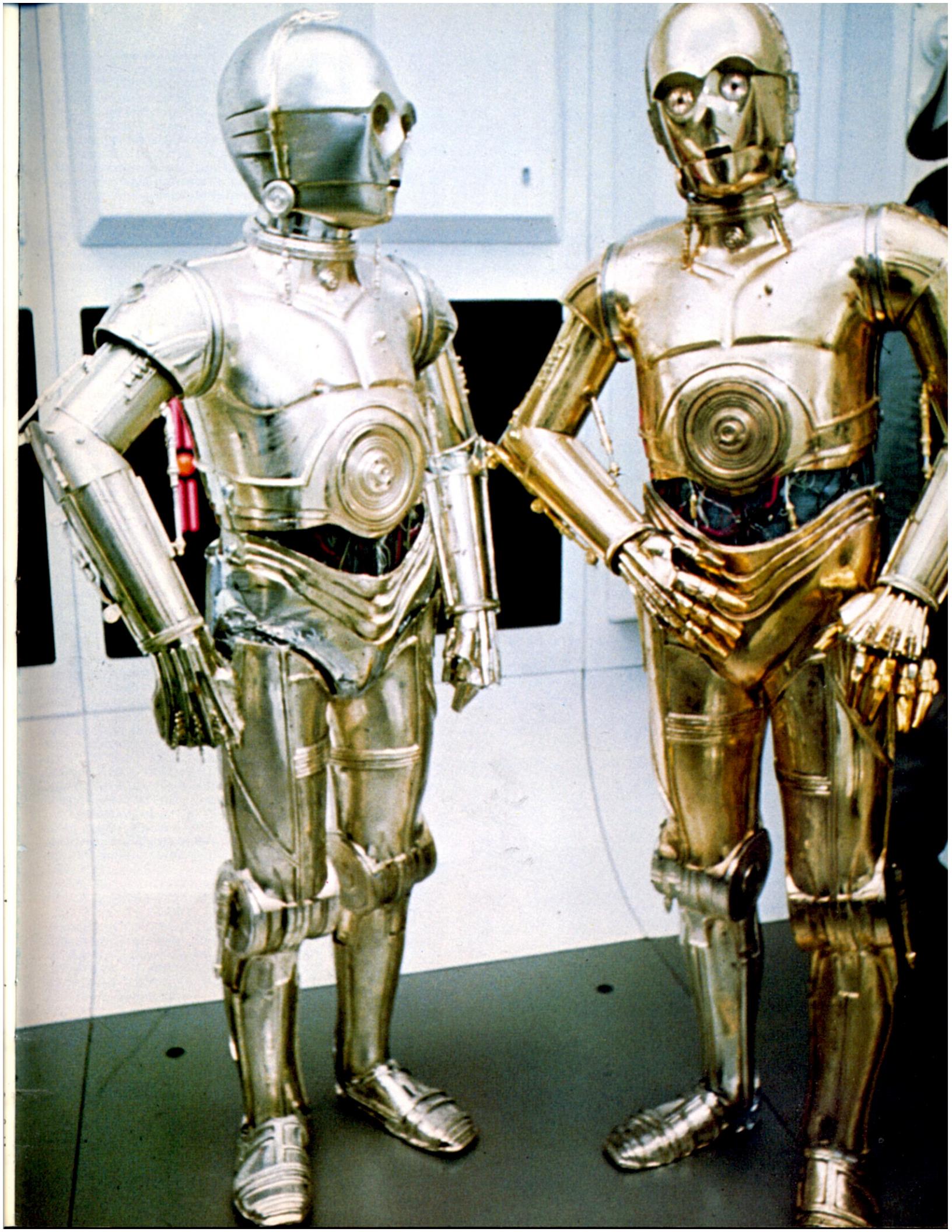
When Variety reviewed STAR WARS the film was called "Hollywood magic at its best." What did you think of that?

I was absolutely choked. It was a terrible thing to say. Okay, let's face it, the opticals were well done, but the money was on the floor with the artists. That's where no mistakes can be made. An optical can be done over and over again. Everything worked first time on the set of this picture. There were no hold-ups at all. The American credits list everybody including the tea boy! I had a super crew: Dick Hewitt, electronics expert; Brian Warner, Bert Hamilton-Smith, Bob Nugent, all engineers; Bernie Smith, electrician; and these are only the key boys. Credit where credit is due, and the fact that my boys didn't get any is disgusting.

You know, I've had offers to go to the States and work, but I won't go. I'm British and we have a great industry here, and a harmonious one, and we are always being taken for a ride. Unfortunately, 99% of our work comes from the States.

Could STAR WARS have been made to-

Two of the many robots fabricated by John Stears and his English special effects crew for STAR WARS. On the right is C3PO, played by Anthony Daniels. The other, silver, protocol robot is seen with 3PO in only one brief cut at the beginning of the film as Princess Leia's Rebel Blackade Runner is stormed by Imperial Forces. Stears created some robots not seen in the film at all.



tally in Britain then?

Yes. No question about it. But you'd need three of me to do it in time.

Is there anything not in the film that you would like to have seen included?

There are robots you don't see in the final edit of the film, but nothing has gone that I regret.

Have you been approached for STAR WARS II?

Tentatively. I don't think it's a mistake to do a sequel as long as it's done well. The science fiction market has hardly been tapped yet. The last I heard was that George would write the story but not direct it. It would be a completely new storyline. I'm not even sure if Fox has an option.

Would STARLOCK have happened if it hadn't been for STAR WARS?

No. This is a sad thing. I've been offered a lot of science fiction films, but one has to be so careful and make sure the money is there to do it well. I'm particularly involved in STARLOCK due to the fact that Gordon Hessler and I co-wrote it. The original script was by John Starr and it was impractical as a working draft. The Starlock character is in fact Vampirella, but we can't be accused of plagiarism as the story is so far removed from the original. I've found superb locations, suggestive of other worlds, in the south of France that no one so far has discovered. I want to further my writing career and with this experience I'm convinced I could do it well.

Is your attitude toward special effects, do them physically as much as possible?

Yes, definitely. I'm not a trick man. I'm a purist at heart. In STARLOCK I have a five hundred yard track of a spaceship as a star, a problem certainly, but I'll do it, and our budget isn't that large. The majority of films are done optically because no one has the guts to stick their necks out and try them physically. I believe a lot of films can totally be achieved by the use of only physical effects. Opticals have their part of course but filmmakers use opticals to the extreme. ■

RICK BAKER DOUG BESWICK LAINE LISKA

2nd Unit Makeup Cantina

Rick Baker is probably the most prolific young makeup artist working in Hollywood today. His credits read like an encyclopedia of the bizarre and the fantastic, from the simian snarls of his KING KONG

INTERVIEW BY PAUL MANDELL

Doug Beswick sculpts the clay prototype of the bug-eyed Cantina band members.

re-creation to the poignant aging of Cicely Tyson in the TV-film THE AUTOBIOGRAPHY OF MISS JANE PITTMAN for which he shared an Emmy award with makeup artist Stan Wilson in 1974.

Born in New York in 1950, Rick and his family moved to Covina, California two years later where he spent his formative years. He developed a keen interest in theatrical makeup and fantastic physiognomies at a rather young age and continued to work diligently at his hobby of mask making during his teenage years. Rick landed a job at Art Clokey Productions in 1968 while he was still in high school, and he soon developed close friendships with such artisans as Jim Danforth, David Allen, and Doug Beswick who introduced him to professional techniques for making masks and doing fantastic forms of makeup. His first major undertaking in that field was the construction of the elaborate costume for OCTAMAN, a 1969 low-budget feature, and he was soon creating his own masks and facial appliances for merchandising during the Halloween season.

In 1971, Rick came into his own with his creation of the ape suit and makeup for SCHLOCK!, John Landis' spoof of horror films, which was soon followed by the creation of a two-headed gorilla suit for a typical AIP film, THE THING WITH TWO HEADS. As bad as that film was, Rick's bizarre costume creation was a sight to behold.

In 1973, Rick moved on to bigger and better things. Makeup artist Dick Smith, his childhood idol with whom he had been corresponding since 1969, selected him to assist on the production of THE EXORCIST. Rick gained additional experience in making molds and went on location with Smith in Iraq. During the filming of THE EXORCIST, he managed to get the job (with a little help from his mentor) of creating duplicate heads of Geoffrey Holder and Yaphet Kotto for LIVE AND LET DIE, and followed it in 1974 with perhaps his most grizzly creation, the monster baby for Larry Cohen's IT'S ALIVE! Other jobs included a death mask for David Carradine in DEATH RACE 2000 (1975), special makeup appliances for AIP's SQUIRM, and the complex gorilla suit for Dino DeLarentiis' KING KONG, an arduous affair that spanned the period of October 1975 to October 1976. Some of his more recent works include a cameo appearance in his own custom gorilla suit for John Landis' KENTUCKY FRIED MOVIE and the mucous monster for Max Rosenberg's THE INCREDIBLE MELTING MAN.

Director Brian De Palma sought after Rick to do special makeup effects for his new film THE FURY. Rick's current project is a sequel to Larry Cohen's IT'S ALIVE! entitled IT LIVES AGAIN! for which Rick is creating not one, but three mechanical mutant babies, a challenging assignment for any makeup effects artist. When George Lucas selected Rick Baker to supervise the creation of alien creatures for additional Cantina scenes in STAR WARS, he couldn't have picked a better man for the job.

Doug Beswick is a talented young model maker and stop-motion animator. Born in 1947 in Jamestown, New York, he and his parents moved to Los Angeles when he was five and he attended elementary schools in San Fernando. He didn't go to college. "I



registered and decided that wasn't what I really wanted to do. I wanted to try to get into the movie business somehow."

Like all other notable animators working in Hollywood today, Doug started out by producing his own 8mm stop-motion home movies. His first real contact was Jim Danforth in 1966 who referred him to Art Clokey Productions, a familiar training ground for many stop-motion animators, including Danforth himself. During his four years at Clokey's, Doug worked on a series of sixty-five GUMBY films and co-animated about half of them. His decision to freelance after leaving Clokey's resulted in his collaboration with Rick Baker on several film projects.

In 1970, Doug went to work at Cascade under the supervision of Phil Kellison and Tim Baar, and did occasional work over at Gene Warren's Excelsior Pictures. It was during this period that Doug found himself on the set of *FLESH GORDON* and worked with Wah Chang on an impressive stop-motion educational film entitled *DINOSAURS, THE TERRIBLE LIZARDS*. Wah built most of the models and Doug did about 80% of the animation, a hefty task that spanned a period of about eight months. Recently, Doug has been involved in a variety of projects. He built the miniature submarine used in *THE MAN FROM ATLANTIS*, created the Cantina band heads for *STAR WARS*, and worked on the soon-to-be-released *PLANET OF THE DINOSAURS* with stop-motion filmmakers Jim Aupperle and Steve Czerkas. He is presently devoting his time and talent to Jim Danforth's *TIMEGATE*, and there is a strong possibility that he will be assisting Jim on the animation—a wish that Doug has harbored for a long time.

Laine Liska is a talented stop-motion animator whose television work reflects his flair for character animation. He is but one member of that microcosm of professionals doing their frame-by-frame thing in the network of Hollywood commercial houses. He was born in 1950. One of the extraordinary things about Laine is the fact that he never attended any institutions of higher education and chose to rely on his artwork, making a living for himself rather early in life. "I started animating professionally in 1971 after I returned from military service. I went to work on a short educational film at Cascade Pictures under the supervision of Phil Kellison. With a good recommendation by David Allen—and with a lot of help—it turned into four and a half years of steady work. Said Jon Berg of Laine: "He's very fast and very good."

Laine is most noted for his animation of the Swiss Miss commercials done at CPC and a one-shot recreation of Speedy Alka-Seltzer with a remarkable fidelity to the original that was done at Swift-Chaplin in the 1950s. He's worked on the Green Giant village and has recently created a stop-motion character for Stroh's Beer. Another one of his contributions to film fantasy was his remodification of the Great God Porno in *FLESH GORDON*. He is presently creating aliens for *GALACTICA*.

Stop-motion animators Jon Berg and Phil Tippett, interviewed elsewhere this issue for their work on the chessgame sequence in *STAR WARS*, also contributed makeups for the Cantina sequence. Says Tippett: "I worked on four or five devilish-looking things. I don't think any of them



Laine Liska's goat-like Cantina alien, one of four he built for the sequence.

really stood-out like some of the other ones." Berg adds: "I did two of them, only one of which got into the film. It's the one with eyes on either side of its head. It wasn't really a mask, it was more like a big handpuppet. It looked like a hammerhead shark and was done from a Ron Cobb design. It appears in closeup. There was really a lot more to it. We shot a lot of stuff with it, and I don't think you could really tell exactly what it was without a longer cut. I don't think that was the pacifying George wanted to use for it, and that's why it's in there so briefly. The other one I did was just a skull-headed guy, which was just a rubber mask."

"Someone who should be mentioned is Rob Bottin. He was Rick Baker's assistant and certainly contributed to the Cantina sequence. There was really a neat alien that Rick sculpted. It had a big exposed brain with a terrific 'wise old man' character on its face. Because of another commitment, Rick was not able to complete it, so Rob came in. Rick did half of it, then Rob did the other half and made a mold of it. In the picture, I think it's in the background and a little out of focus."

*How did you get involved in *STAR WARS*?*

Baker: Dennis Muren told me they were looking for makeup artists to add to the stuff that was done in England. He gave George my name and I went to ILM with my portfolio and talked to him and producer Gary Kurtz. It turned out that I was one of the last people they talked to. They had seen just about every artist in town that did effects makeup and appliances.

*Weren't they aware of your work on *KING KONG*?*

Baker: Dennis mentioned to them that I was *KING KONG*. This was before the film was released, sometime in November 1976, so there really wasn't any publicity about me at the time.

They saw my work, and George and I talked at length about the Cantina sequence and the different alien concepts. We both had a lot of fun being very enthusiastic about the film. He showed me around Industrial Light & Magic, told me what he wanted, and asked me to submit a bid. I went home, figured it up, and called it in. But I didn't hear from them.

I started work on another picture called

Filming Cantina Makeups

"Actually this stuff wasn't really makeup. Since we only had six weeks and a limited budget, we could not do anything outstanding or complicated. Old masks that had been sitting on my shelf for years were thrown in the day they were shot as filler for the background. Much to my dismay, they ended up being very much in the foreground. One in particular was a crummy werewolf mask that I made as a mass-production item!"

—Rick Baker

Right: Director George Lucas (right) and makeup artist Doug Beswick (middle) with Greedo, played by a secretary at ILM, during filming of the Cantina sequence makeup inserts at Industrial Light & Magic. Greedo is the alien hit man who corners Han Solo about an unpaid debt. The makeup is by Stuart Freeborn, and was brought over from England and modified by Rick Baker's second unit makeup team for some additional shooting. Baker and his team, consisting of Doug Beswick, Laine Liska, Jon Berg and Phil Tippett, are interviewed on the preceding and following pages. Top Left: Some of the Cantina makeup masks and hands. The unfinished one in the center shows how the Band combo masks looked prior to painting. Middle Left: During filming of the Cantina makeup inserts, producer Gary Kurtz (right) snaps a picture. In the suits from left to right are: Laine Liska as the furry creature who scratches his head after Han Solo blasts Greedo, Doug Beswick wearing the mask used for the Cantina Band Combo, Kim Falkenburg in the dark mask, not seen in the final film, and Phil Tippett as the werewolfish character with his back to the camera. Bottom Left: Doug Beswick poses with the masks and hands for the Cantina Band Combo which he sculpted from Rick Baker's design. The makeup was mass produced in latex from molds and painted by Laine Liska.







Laine Liska (second from right) peeks out of the back of one of the aliens he created and played in the Cantina sequence to take some direction from George Lucas (second from left). Moving into position are Phil Tippett (left), wearing a were-wolfish mask, Kim Falkenburg (foreground) and Doug Beswick (right), playing one of his bug-eyed monsters.

settled for only seven aliens. We wound up doing thirteen, and it was then that he decided to do the band combo.

How did that come about?

Beswick: That was interesting. We did not know about the band until we were four weeks into the project. George Lucas dropped by with Gary Kurtz to see how we were coming along and they noticed the head I was working on. It was just supposed to be another one of the heads in the group. Then they sort of huddled together and came back and said, "Hey, could you make more of this guy?" And I said "Sure. We can make as many as you want." And they said "We want to have a little combo in the barroom scene." That was the first we heard of it.

How long did it take to film your part of the Cantina sequence?

Baker: They shot all of our stuff in one day. That was the day I was very involved in applying the makeup for THE INCREDIBLE MELTING MAN and I wasn't even on the set when they filmed it. Our scenes were all inserts. There's a good deal of the sequence that Stuart Freeborn did in England. All of our stuff is identifiable only in that none of the leading players are in it. Any shot of a creature drinking, talking, or reacting to something when you don't see the main bar or Mark Hamill or Alec Guinness was our stuff. The other shots where you do see the leads and the main bar were done by Stuart. He is a marvelous makeup artist. I have the highest respect for his work.

Was the Greedo character one of yours?

Stuart Freeborn did that one, but we put a mechanism in it. The footage that had been shot in England had Han Solo talking to Greedo, and Greedo was just sort of shaking his head. The costume was shipped over here and we put a mechanism in it to make the mouth and ears move. We re-shot Greedo's closeups and retained the two-shot made in England.

I'll bet it was pretty weird on the set that day?

Baker: I know one story that I can tell you about. Doug Beswick, Laine Liska, Jon Berg and Phil Tippett were all wearing the masks in the Cantina band combo along with some production secretaries that worked for ILM. This mask was a design of mine that was changed somewhat by Doug Beswick, who sculpted it. It looked very much like something from THE OUTER LIMITS, which is what George wanted. These people were stop-motion animators and they made these masks in such a way that it was virtually impossible to breathe or see through them. Because I was so busy, I really didn't explain very carefully about the things that should be done to make a mask wearable. The only air hole was this little round mouth that the monster had. Most of them had musical instruments stuck in their mouths. These seven or eight people in the band were trying to sync up their moves to a Benny Goodman record. They filmed them for a couple of

THE INCREDIBLE MELTING MAN. After I was well into that, I got a call from the accountant at ILM who told me that they wanted me to start making the aliens. I explained to them that I was involved in another film and hardly had the time. However, they said that they liked my stuff and wanted me very badly to do it and asked if something could be worked out. I talked with them again and told them that I could get a crew together and supervise, that I would not be doing much of the work myself. They agreed to that and were happy with the arrangement. I got a crew together of some friends who were able to do the work: Phil Tippett, Doug Beswick, Jon Berg and Laine Liska. All of them are stop-motion animators.

Wasn't that an odd crew to have for makeup effects?

Baker: Actually this stuff wasn't really makeup. Since we only had six weeks and a limited budget, we could not do anything outstanding or complicated. They were all basically slit-rubber masks, so it was just a matter of having the ability to sculpt and an ability to make molds. They all had that ability. The knowledge that they lacked in doing something of that sort, I knew all about, so I could tell them how to do it.

How many characters did you create for the Cantina sequence?

Baker: I had very little to do with the sequence outside of the fact that I got the crew together and supervised what I could. I designed a couple of the aliens and did one head which is not even in the film, although it is one of the better heads. Some of the best aliens we made aren't even in the picture. I don't know why. I'm just assuming that they didn't cut it well.

Liska: I did four. When you go into the barroom, I did the first character you see. It was sort of a T-headed guy with glowing eyes and purplish in color. That was actual-

ly a hand puppet. Some of my other characters were in the background. There was a Cyclops-like thing; another one resembled a goat; still another was a big, white furry guy with four eyes. I got to play "him" in the movie. Actually, all of us who worked on them managed to get into the act. I even got a laugh—I'm the guy who scratches his head!

Beswick: We did thirteen different aliens and I did seven of one particular head for that band. Rick Baker donated several of his masks that he already had made. Whatever was available we used to fill-up the barroom and the old masks really helped.

Baker: Those old masks had been sitting on my shelf for years. They were thrown in the day they were shot as filler for the background. Much to my dismay, they ended up very much in the foreground. One in particular was a crummy werewolf mask that I made as a mass-production item!

What materials were the aliens made of?

Beswick: All the heads for the band combo were made out of latex from the same mold. They had such huge bulbous heads that we reinforced the latex with gauze. The latex did not have to be very thick since the heads were given this extra support. I sculpted that one character and made seven copies from the mold. Of course, the hands had to go with it, so I sculpted one set of hands and cast fourteen of them. Laine helped me paint them. We kind of mass-produced them on an assembly line. I think we bought about forty gallons of latex for the project and it's all gone! We also had about 500 pounds of plaster for molds. That's quite a bit of material to work with.

I know that you were working on a very tight schedule. Your output was amazing in that respect.

Liska: Originally, George would have

hours and wound up with an incredible amount of footage of the band playing. Because they had to be physical, dancing around while they were playing and not being able to breathe, they were close to passing out. It was a lot of fun watching the dailies. All of a sudden one guy would stand up and point to his mouth for oxygen! There was also some funny stuff where the heads caved in. They were breathing so hard, the whole head was contracting and expanding. They went through hell on that one!

Beswick: That was kind of weird. The mouths of the band characters were just little indentations. They were sculpted that way so they would look like they were ready to blow into a musical instrument. That was the only place I could see to make an airhole, so I put a little vent there. On the day of the shoot we found ourselves in these masks with hardly a place to breathe! If you had them on for a short period, it was fine, but we had to do fifteen to twenty-minute takes in them. We were doing a pantomime to some old "forties" music. It wasn't the actual music used in the film, it was just something to give us a beat. We were filmed *three times*, each time being about twenty minutes, so we were in those things for about an hour. We only took them off once in that time period. We would pull the gloves off and the sweat just poured out of them. It got so bad, we were re-breathing our own air! While the propman was giving us an occasional shot of oxygen, Gary Kurtz was going around slitting the masks under the chin with a knife or a razorblade to create "gills" for us.

You didn't anticipate a breathing problem during the sculpture stage?

Beswick: Well, no! [laughs] I put it on after I made it and I had this hole in the front and I could feel cold air coming in. So there didn't seem to be any problem with it. Also, I didn't know what angles they were going to shoot, and I didn't want any vents to show up unnecessarily. As it turned out, we were all photographed from the front! The minute Gary started to cut our "gills," you would just feel this heavenly draft rushing in. It was quite an experience.

Liska: I also got stuck in another one that I happened to make, that thick-suited creature with four eyes, so I can't blame anyone but myself. It got very, very hot. After about two hours, I had to hang my head out the opening in the back of the thing. I guess that's called rushing the construction a bit and forgetting a fundamental thing, namely that people have to breathe! It seemed to work out okay, though.

Was George Lucas around that day?

Baker: Oh, yeah. Despite the incidents I mentioned, it was a very easy-going experience and everyone there that day had a lot of fun doing it. George got very involved in the direction of it. He was busy running all around slopping vaseline on the band members to make them all slimy-looking.

The Cantina sequence turned out to be one of the high points in the film in that it provided a bizarre kind of comic relief.

Baker: That's what I understand. When I saw the film I just flipped out. I raved to George and Gary about it but I almost felt like apologizing because I didn't feel that the stuff we did was up to par with the rest

of the picture. They understood the situation, though. We gave them a hell of a lot more than what they actually paid for. They were very grateful, but I was not at all happy with what we had in it. The things were crudely done. We did something like *twenty monsters* on a *six week* schedule. But we weren't complaining. We wanted to do as much as we could for these people. I particularly liked George's attitude about the film, especially after going through the experience of *KING KONG*, where I was working for people who had no integrity at all.

It was good to see so many familiar names finally get screen credit.

Baker: They were very nice in giving credit to everybody. I originally went in there knowing that we would *not* receive credit for this. But they were so pleased with the work that we turned out in time and for the money, that Gary Kurtz offered me credit. I told him that I could not take it without feeling guilty because I was just supervising. Over the years in motion pictures, there's been so many people that I've looked up to as the people who actually did the work, only to find out later that they were department heads who had virtually nothing to do with a specific make-up. I felt that I could not do the same thing myself. I said that if you give me credit you have to include everybody on my crew. They said they would work something out. After we did the Cantina sequence, Jon Berg and Phil Tippett did the chess game, so they were happy to take the credit as stop-motion animators. They put Doug Beswick's name with mine. Unfortunately, Laine Liska, who did a lot of the work, was left out of the credits.

Liska: I guess I somehow got lost in the shuffle, just one of those things that happens sometimes. It would have been nice to be linked with this film *on film*. There were a lot of names up there, and a lot of names that didn't get up there. Anyhow, it wasn't really work, it was 100% fun.

Beswick: I think it was the greatest experience of my life just to be connected, even in a small way, with a film of that potential and scope. If they ever do another one, I hope I get the chance to work on it. ■

JON BERG PHIL TIPPETT

Stop Motion Animation

Jon Berg is a stop-motion animator who specializes in the construction of articulated armatures for stop-motion puppets. His ball-and-socket skeletons have literally provided the backbone of characters animated by such stop-motion luminaries as David Allen and Jim Danforth, to name but a few. Born in 1946, Jon began animating while still in high school. Perhaps the most fortuitous event after high school graduation was his acquaintance with David Allen. "When I met Dave, I showed him some footage that I had done of a little gorilla [laughs] — how many people do that? — and he got me a job doing the Pillsbury Doughboy at Cascade Pictures which turned into a full-time job." Before that, Jon attended Santa Monica City College for two years and left to pursue his interest in stop-motion animation.

Jon became a regular member of the Cascade crew in 1969 and stayed there un-

INTERVIEW BY PAUL MANDELL

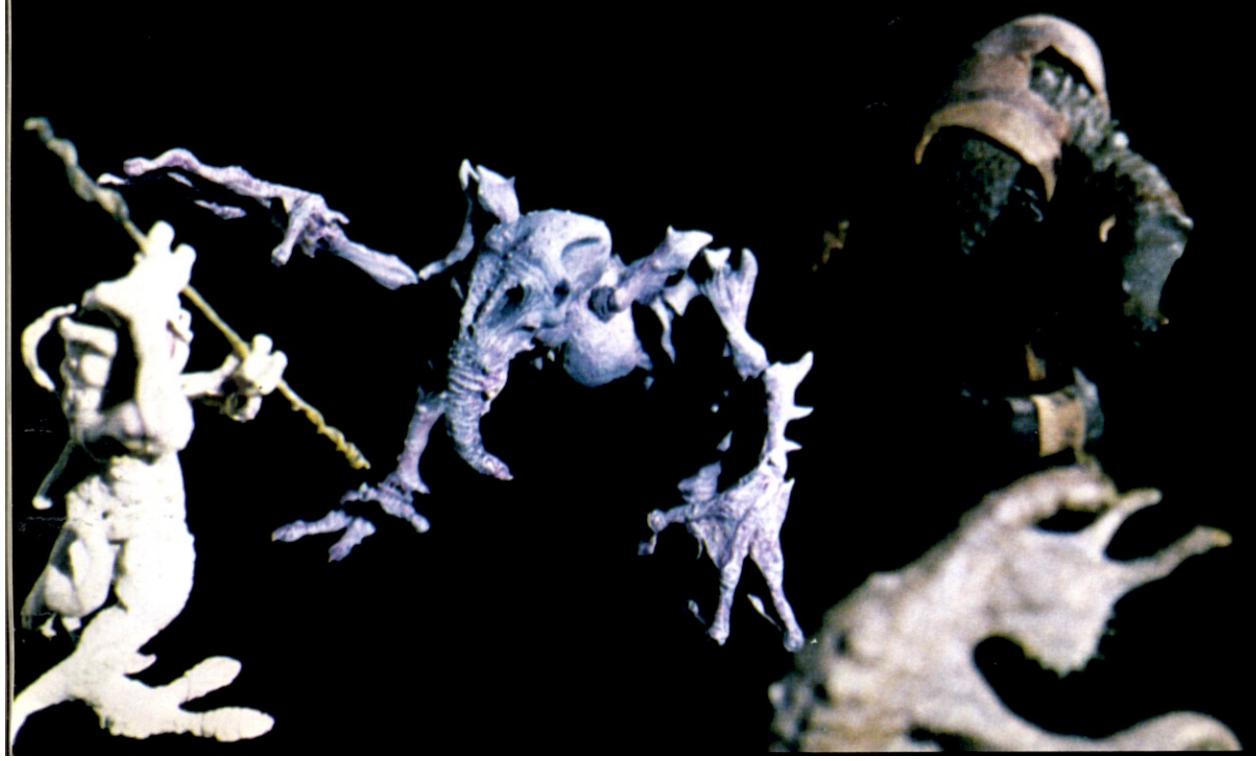
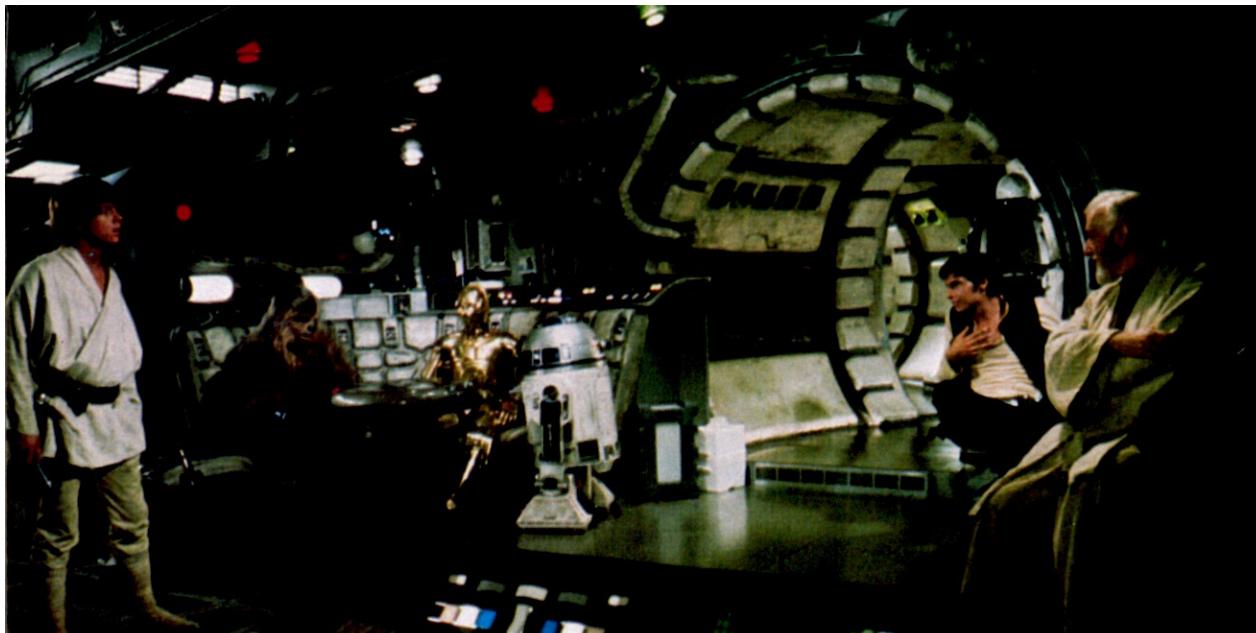
Phil Tippett (left) and Jon Berg with the STAR WARS chessmen they made and animated.



The Chess Game

"The initial concept of the chess game as conceived by George Lucas and Gary Kurtz was more of a literal chess game. They wanted little people matted-in that would fight. After seeing *FUTUREWORLD*, George was sort of disappointed in seeing that someone had already used his idea."

—Jon Berg



Top: The live action sequence filmed in England into which the chess figures were superimposed. In the background Chewbacca (Peter Mayhew), C3PO (Anthony Daniels) and R2-D2 (Kenny Baker) stare at an empty chessboard, while Luke (Mark Hamill) and Ben (Alec Guinness) listen as Han Solo (Harrison Ford) warns the robots that they had better let the Wookie win. The chess figures were superimposed even in the long shots such as this. *Middle:* Phil Tippett (left) and Jon Berg (right) animating the chess figures at ILM. Everything is draped in black so the action can be superimposed on the chess board in the final composite. Jon Berg and Phil Tippett are interviewed on the preceding and following pages. *Bottom:* A closeup look at some of the chess figures do battle. Originally the figures were supposed to be superimposed as lined holograms like the figure of Princess Leia.

til 1974 when the company changed management and became CPC. Among the many character's he's animated besides Poppin' Fresh are Hans the Nestle's Man, Ogg, and several others for Kellogg's. He also has the novel distinction of having been the "ankles and hands" of the Jolly Green Giant in a special makeup devised by Rick Baker for color extreme closeups.

Jon's most recent work includes making the armature for William Stromberg's THE CRATER LAKE MONSTER and some armature work for the film LASERBLAST, with effects by David Allen. His joint effort with Phil Tippett—the sculpture and animation of the chessmen—gave STAR WARS some unexpected moments of wonder and delight.

Phil Tippett is a fine sculptor and a hard-working guy. He was born in 1951 in Berkeley, California, and received his Bachelor's Degree from the University of California at Irvine in 1973. "I've been interested in stop-motion work ever since Ray Harryhausen came out with THE 7TH VOYAGE OF SINBAD. I spent my spare time sculpting and doing practice animation. I met Dave Allen and Jim Danforth in 1968. They've helped me considerably."

Phil landed his first job at Projects Unlimited, where he did some minor work for the film SOME KIND OF A NUT under the supervision of Gene Warren and Wah Chang in 1969. "It called for front light/back light matting that involved the stop-motion animation of a little car. It was supposed to be driving half-way across the United States, then turn into a picture postcard located in one of the corners of the screen." He eventually became one of the Cascade crew and has worked at various production houses in Hollywood on a freelance basis, including FilmFare, Excelsior Animated Moving Pictures, and Creative Film Arts. He sculpted THE CRATER LAKE MONSTER under David Allen's supervision, and then went on to STAR WARS to sculpt Cantina makeups and build and animate the chessmen with Jon Berg. Phil is presently involved in Jim Danforth's TIMEGATE. When I last spoke to him, he had just put the finishing touches on a pterodactyl.

What was your working arrangement?

Tippett: Each of us did about half of the chess set. Jon did the lead animation. I was mainly involved with the animation of the background characters. The way we worked it, each of us would take half of the chessboard for any particular shot. One of us would animate half the characters while the other person would animate the other half.

Were there any other animators?

Berg: No. Phil and I did the chess scenes together and built all the characters. Do you remember the little one that jumps up and gets thrown down? That was one of the more memorable bits of business that I animated.

How many animated models are there?

Tippett: I believe we originally built ten, but George Lucas axed two of them, so finally there were eight models that showed up in the final film. We built all these weird and crazy things, and by the time we put all of them on the chessboard, it kind of looked like a bunch of spaghetti! We had to pull a few of them out in order to make the scene more intelligible.

Where was the animation shot?

Berg: It was shot on one of the back stages of ILM. All the facilities were there. Dennis Muren, who's had a lot of experience with stop-motion situations, did the lighting setup and the camerawork on it. While we were still busy finishing up some of the puppets, Dennis was setting things up for us. ILM also had some people build the actual animation table.

Whose idea was it to have stop-motion figures in the first place?

Berg: The initial concept of the chess game as conceived by George Lucas and Gary Kurtz was more of a *literal chess game*. They wanted little people matted-in that would fight. George saw FUTUREWORLD which, I believe, had a similar sequence in it. But it was actually an idea that George had four years ago and it turned up in FUTUREWORLD by sheer coincidence. After seeing FUTUREWORLD, he was sort of disappointed in seeing that someone had already used his idea. When Phil and I heard through Dennis Muren that George wanted some more monsters for the Cantina in addition to the ones that Stuart Freeborn had built, we made up some small sculptures as design ideas for George and Gary to see. In the interim, Rick Baker got the job as supervisor and we worked with Rick on that. When George saw our little models, he and Gary kind of cooked up the idea of using stop-motion.

Do you have any idea why the animation is merely superimposed in the scene?

Berg: George wanted that transparency. The main idea was to produce a representation of an electronic hologram. Matting the figures onto the board would have rendered them solid. So what we did was shoot it against black velvet and they doubled it in—one of the old basics. The live action portions of the chess game were photographed on the pirate ship set over in England. Originally, they planned to have video scan lines printed into our animation just as had been done with Princess Leia. Once we finished our animation, it was sent off to the opticals department. I don't know where or when the decision was made, but the idea of the video scan was dropped. I do know that they were under a tremendous amount of pressure to get that stuff finished. So I don't know whether the video scan was too time-consuming, or that it just didn't look good enough.

Did you tend to get in the way of each other while animating on the same set at the same time?

Tippett: No, not really. Everything went surprisingly smooth. When Jon and I arrived at ILM, all the setups were made and everything went amazingly well. I suppose all I could say is that we just really had a great time. We encountered absolutely no hostilities. And George was really great to work with.

Was Lucas around while you were animating?

Berg: He came in and talked to us. We set the thing up with the figures on the board and he kind of arranged them, which was nice. We were able to throw ideas back and forth. He just didn't come in and dictate what he wanted; we all discussed the moves and the various bits of business. It was George's idea to have the character hop over to the front, so we rigged that up. After we had started shooting, he or Gary

would peek in and see how we were doing. Once the ideas were nailed down and the stop-motion began to progress, we were pretty much on our own. George was very busy with the cutting and the sound mix, but he cared enough to get involved and make suggestions.

Do you have any favorite characters among the ones you built?

Tippett: The only one I made that had any kind of story value was the one little beastie who picks up the guy that hops across the chessboard and throws him down. I actually built that particular one several years ago. It wasn't for a specific project or anything; it was just something I was doing on my own while experimenting with new materials. I had it in the shop one day when we were doing the makeups for the Cantina sequence. When Lucas saw it, he really liked it a lot and said, "Hey, that would really be great for the chess sequence." The thing had been sitting in my closet for a long time and I thought this would be a really good chance to get it on film. I had made arrangements that they would just be *renting* that particular model. In filling out my invoice, I just charged them on a rental basis for that puppet. Recently, Jon and I put together a little display of the creatures for George and sent it up to him. I had the ball-and-socket armature removed from the model before we let it go. So he's in possession of that particular puppet right now. But as far as I understand, they don't own any design rights on that one.

It looked strangely similar to the Taurus model in EQUINOX.

Tippett: Actually, when you're using a standard ape armature like "Number XB-5" or something like that, certain models tend to look similar to a certain extent. When you're doing the "basic humanoid monster-weirdo shape" there are bound to be similarities.

Berg: That was the largest figure. I think Phil was intrigued by the model that Dave Allen built for EQUINOX. There are certain proportional similarities between the two. Incidentally, that model was the only one with a fully articulated armature in it, everything else was *wired*.

Wasn't it hell trying to get stylized action out of wire figures?

Berg: It always is, although we would have preferred to have everything jointed. It's just one of those things that often happen when you're working on a project. The original concept and requirements were much simpler. As we got into it, there were more ideas that were coming up. Then some of the actions they wanted began to get a little more complicated.

Did you shoot the animation on single frames? I've heard of one company in Hollywood where speed is so important, you can get in trouble if you're caught shooting on singles.

Berg: We knew we were under pressure to finish the animation as soon as possible so the optical lab could make composites in time for the release date on the picture. But there wasn't anybody breathing down our necks. We had a tremendous amount of freedom. We shot everything on singles, but because of the electronic/holographic look that was called for in the sequence, we were trying to run a bridge between the absolute smoothness of a Doughboy and an electronic effect. We were trying to pro-

duce something with a *sharp edge* to it, that looked artificially generated.

Were you pleased with the results that you got?

Tippett: Sure. We would have preferred to have had a little more time to go back over and reshoot things, but Lucas felt that the animation was adequate for the film, I suppose.

How long did the animation take to do?

Berg: I think it was about a week. We shot more footage than they used. We did some closeups of the stuff, but it apparently didn't cut into the sequence for the timing that George wanted. But the rest of the shots fit right into the picture.

What was the nature of the animation that wasn't in the final cut?

Berg: There were three closeups that were dropped, as I recall. There was a "pickup closeup" on the key action that George wanted of one of the characters fighting with the other. There were also some reaction shots of the characters. I think George felt it was more than necessary for the sequence.

Incidentally, we actually started working on the figures for the chess game before the Cantina shots were photographed and started animation after the Cantina characters were built. We had just finished working on the Cantina and went right on to the chess game; it was a highly compressed, hectic period with a lot of activity going on in a very short space of time. Phil and I were working crazy hours, something like three in the afternoon 'til seven or eight in the morning!

I'll bet you were both happy to get screen credit as stop-motion animators.

Berg: It was terrific. I can't tell you how great a pleasure it was to work on it and how lucky I feel to have been associated with it. Dennis Muren was the guy who kept pushing our names to work on the film, and he deserves a lot of credit for getting us on the picture. Another interesting thing was that we were working under the assumption that we wouldn't get screen credit. But we got it. George and Gary did that for us. They were not obligated to do

it. It was what they wanted to do. And boy, that is something that you just do not find in this town!

Everyone who worked on the picture had glowing things to say about George Lucas as a director and as a human being. Do you have any personal reflections on him?

Berg: There's one incident that I remember well. Phil and I showed up about 7:00 one morning at the stage where we were to be shooting the Cantina shots. We were out in the back waiting for the others to show up so we could get in and find out just how things were going to be lined up. As we looked down the alley, there came George Lucas all by himself wearing a Pendleton shirt and looking like your everyday average guy. After we said "Good morning, George," we entered the stage. He took a look at some of the masks and said, "Hey, is there any vaseline around here?" Then he knelt down on the floor and started slopping this stuff on the aliens. We said, "Don't you want us to do that?" And he said, "No, this is the fun stuff!" Which was so neat because usually the people I've worked for have no concept of "fun." It was so great to see a guy making this super movie sitting down and doing something himself and having fun with it. He was just a very relatable person, no pretension about him at all.

When we were shooting the chess game, George would take the figures, do a little pantomime, jump them over here and stuff like that. It was fun to see him loosen up. You know, I'm so used to working in commercials where things are generally more uptight. George was so nice to work with and so open, just a terrific contrast. He was going for this sense of enjoyment. I'm always amazed when I see *STAR WARS*. It runs the spectrum of emotional responses, but there is that all-important sense of fun and enjoyment throughout the whole thing. When I think of the pressure that George must've been under while all that was going on, I find it incredible that he could still generate that sense of fun and wonder and enjoyment. That in itself is a terrific achievement. ■

*Stop-motion animator Phil Tippett and the *STAR WARS*'s chess game figures.*



BEN BURTT

Special Dialogue and Sound Effects

When we think of *STAR WARS*, our initial impression is that of an enthralling visual experience, which it unquestionably is. Yet for all of the mind-boggling razzle-dazzle on the screen, the effectiveness of each illusion would be lost forever without the proper sound effect. Visuals open the eyes and sound raises the goose bumps. Diminish the dynamics of one and the other automatically loses its punch. That symbiotic relationship is relevant to all genres of the movies but it is an especially sensitive issue with science fiction. It is difficult to imagine the opening shot in *STAR WARS* without that incredible roar. Likewise, the Wookie (a fanciful extension of George Lucas' malamute dog named Indiana) and R2-D2 lose their contagious charm without the proper voice. *STAR WARS* is a fusion of sight and sound taken to the extreme. Surprisingly, most of its innovative sound effects were largely the work of one individual, a young and talented filmmaker/sound recordist named Ben Burtt. "This is kind of a cliche, but it's true. Good sound is taken for granted because it's in there, and if everything is believable in terms of sound, you just accept it. Most people come out of a movie without even knowing that anything was done, that sound is all pieced together and faked and that maybe none of the voices are real and all of the footsteps are artificial."

Ben Burtt is a fantasy film fan, and that made him especially suitable for *STAR WARS*. He was born in 1948 in Syracuse, New York and lived most of his twenty-nine years in the east. Many of his childhood years were spent producing effects-oriented super-8 movies. He graduated from Allegheny College in Pennsylvania with a degree in physics. "You see what training in physics does for you? You immediately go into something else!" After that, he decided that he wanted to do film-making on a professional level.

During the next year, Ben made some films and won some contests, after which he tried producing commercials in Syracuse for a year, gaining experience but not making a living. "In that case, I was doing photography, lighting and sound, and working with a lot of guys." His films became more

INTERVIEW BY PAUL MANDELL

sophisticated in the special effects area, making use of miniatures and matte paintings. He set up his own front projection system at home. At the time ILM was in its formative stages and Ben was given the assignment of researching different sounds for STAR WARS, he spent some of his time at the facility testing out visual effects. "Because my experience in effects proved useful, I did some minor things. I was never in contention to do anything major. That wasn't my goal. I was there to learn."

When doing commercials in Syracuse bore no fruit career-wise, Ben decided to continue his higher education. He made a film entitled GENESIS which dealt with the creation of the Universe. "It seems that everyone has a film named GENESIS! I guess that's something we all have inside of us." On the basis of that film, he was awarded a scholarship and went to the graduate school of Cinema at USC for three and a half years. There, he became an instructor in sound, learned the technology, and became acclimated to the Hollywood movie colony.

In May of 1974, he completed work on a movie called KILLDOZER on which he did miniatures and "a meteor crashing into Africa." It was done for Universal and the effects were shot in 16mm. That led to work at Graphic films as a sound editor and other learning jobs in that field. "I did sound editing on various Kung-Fu pictures, sort of off-the-wall, non-union projects, gaining more experience as they came along."

In recent years, Ben worked in "obscure capacities" on several Roger Corman films, among them HOLLYWOOD BOULEVARD and DEATH RACE 2000. With the advent of STAR WARS, he was charged with creating all the sound effects for the show and spent over a year researching them. He will be doing the same for STAR WARS II. When I left Ben, he was busily engaged in remixing AMERICAN GRAFFITI for stereo at American Zoetrope in the San Francisco area. He just completed the remixing of STAR WARS in German, to be released overseas in February.

I believe you were one of the first people hired for the STAR WARS project?

I suppose I was. Gary and George were searching for people at USC to do special effects and costume design, and artists and model-builders to design spaceships. This was in June of 1975. Ultimately, Gary Kurtz contacted some professors at USC and asked them to recommend someone who would be interested in working on the soundtrack. I was recommended since I was the biggest fanatic down there in terms of sound effects.

Did you know George Lucas?

I didn't know him at all. I knew of him but I never met him. Their main idea was to gather a young, inexpensive crew with lots of fresh ideas. After the recommendation, I was interviewed by Gary Kurtz and got the job. My first assignment was to come up with a voice for the Wookie. At that time, the Wookie played a slightly bigger role than he eventually ended up with. The story was still evolving at that point. They had a third draft of the script, and I think they eventually shot on the fourth draft. I think they were really concerned about having a major character that didn't

speak English. They didn't tell me much about the movie.

How did they approach you?

The first thing they said was, "We have this giant creature who's like a big teddy bear. He's a good guy, but sometimes he's ferocious. We need a non-human voice for him that's really believable but not recognizable as a known animal." In a few weeks time, it became evident that they wanted a whole repertoire of sounds. I finally saw the script, met George, and talked with them more. They needed all kinds of voices and equipment sounds. They needed sound for weapons and hardware and mechanical devices. They didn't tell me this initially. I guess they were moving slowly, trying out people to see what they could do. About the same week that I started in July of 1975, they rented space in Van Nuys for ILM and began to staff it with people. So I began to "invent" sound effects for STAR WARS.

How did you proceed?

Basically what I did was break down the entire script into different categories—special voices, weapons, vehicles, doors, etc. I was trying to find sound that would be appropriate and original. In a film like this, you're creating a total fantasy world. Nothing really exists. None of the equipment makes any sound during filming, or the sound it does make isn't the right one. All the sets look great but they're totally dead. There's no life to them. All kinds of sounds were needed to give it credibility and to make it exciting. It's not just to make it acceptable. The whole movie is a comic book. It needed really energetic sounds that were visceral.

Did science fiction films like FORBIDDEN PLANET that were unique in sound influence you in any way?

Yes, in a way. FORBIDDEN PLANET was all electronic. The first aspect George stressed in our initial conversation was that he did not want anything in the picture sounding electronic. Perhaps R2D2 was the only exception, but even he didn't sound typically electronic. Since FORBIDDEN PLANET, it's become a cliche. Many films have copied pieces of it, but they've never been as successful. It was a very alien score. Although I was a big fan of FORBIDDEN PLANET and I tried to emulate a lot of things like that, it was not the approach they wanted for STAR WARS. They wanted what George always called an *organic soundtrack*, where everything is real and life-like. It doesn't sound synthetic. There is a tendency of electronic sounds to be very pure. And it's been done so many times to create a fantasy feeling. STAR WARS is derivative of so many familiar genres, yet it's still a fantasy. The main problem with creating sound for the picture was that you have to make it believable. Then again, it couldn't be *too* familiar because then it would not be part of an alien culture.

What kind of films had the heaviest influence on you in terms of sound?

I would have to say I was influenced a great deal by a lot of war movies and Bond movies. There really hasn't been a space/fantasy film like STAR WARS other than the FLASH GORDON serials of which I loved the sound. I tried to go back to them and see how the sounds were created. WAR OF THE WORLDS was another one. A lot of the material in that film was similar to



Ben Burtt.

the sound effects in STAR WARS, and some of it was probably produced in the same fashion.

Let's get back to the Wookie. How did you create his voice?

With the Wookie, my research involved a few things initially. One was to determine all of the different methods people have used to modify sound and produce voices. I collected tapes of all kinds of weird languages and studied them for alien-sounding, unfamiliar characteristics. I went to language labs of various universities, collected tapes, and hired people who spoke unusual African languages, recorded them, and listened to what they had to say. I talked to people who had artificial voice boxes and recorded sounds from anything involving voice modification as in synthesizers. The telephone company does all kinds of weird research on how to store voices in different ways. So I tried to explore as many avenues as I could.

The Wookie had to be approached differently because he was a real animal. The challenge there was to find some actual animals, record them, and somehow make use of those sounds for his speech. We initially thought that bears would be pretty good, and they were. I recorded all kinds of bears that I could find. I rented bears, went to ranches where they had pet bears, and then recorded all different kinds of animals. I went to zoos and recorded sea lions and camels and tried to determine what animals had certain speech patterns.

Sea lions sound like they would've been ideal for the Wookie.

Sea lions and walruses were terrific. Bears are very good. As it turned out, a lot of the Wookie was mostly "bear." Even bears of the same species still have different personalities!

Did you spend any time near the Carmel-Monterey shore where sea lions are prevalent and people are scarce?

Actually I went to Marineland, where they had public collections of animals. I



Special dialogue and sound effects man Ben Burtt "twangs" a cable attached to a radio tower with a hammer, just one of the sounds crucial in devising the sound of *STAR WARS*' lasers.

would make arrangements to go in there when the public wasn't around and tried to get recordings. This went on week after week. Meanwhile, I launched research into the areas for weapons. I went out to army bases and missile launches and took weapons out to the desert, shot them, and recorded explosions. For vehicles, lasers, and spaceships, I spent lots of time at various airports, Air Force bases, and factories where they tested turbine engines. The main idea was to take those sounds, process them and orchestrate them like musical instruments.

So the Wookie was a composite of different animals?

In the end, I took recordings of bears, camels, walruses, lions, and a few cougars and extracted sounds out of them that were similar in color. The difficulty in dubbing a language is that you have to be consistent—you just can't cut a dolphin to a walrus! It has to be homogenous. I picked various bits of those animals, sounds which were consistent, and built *word lists* out of them—there's Sound A, B, C, D, etc. I took each one of those and reproduced it at different speeds, plus or minus, a little bit of one animal or another, sort of like musical notes. Once you have this batch of different sounds, you could draw isolated bits of "words" or syllables. Then you combine them and try to make up a *sentence* that gives the desired feeling. The Wookie ended up not saying a whole lot. He roared when he was angry and he had about five or six "sentences."

Did you ever incorporate any human sounds in the composite for the Wookie?

There's not a touch of the human voice in there. It's all animal. A human could not make the sound that the Wookie makes. You could mimic it, but I'm convinced that there is no way you can totally disguise the human voice. The real problem in

making a character like the Wookie successful, even though it's very subtle, is the fact that you *know* that it's an animal sound. It has the feeling of speech to it and you understand that he's trying to say something as an animal. He makes sort of *honking* sounds that a human cannot do. That helped make him acceptable as a real creature. That problem was a recurrent one in *STAR WARS*: you had Jawas and Sandpeople, all of the Cantina monsters, stacks of creatures like that to deal with.

*In preparing the Wookie, did you study Murray Spivack's work on *KING KONG*? He recorded animal sounds at different speeds, played them backwards, that sort of thing.*

Yes. I researched films like *KING KONG*. I found all the old recordings and tried to study what had been done so that I could do it myself or do it better. There actually is no source of research for sound history in the movies—there are no books on it, and people who remember what happened are scarce. I didn't really try to imitate too many of the sounds done in *KING KONG*. There are limited effects you can achieve by recording backwards. There was a character in *STAR WARS* whose voice I later changed but originally spoke all his dialogue in reverse!

What character was that?

That was Greedo, the bounty hunter, alien extortionist who talks to Han Solo and pulls a gun on him, sort of a hit-man alien. Eventually what was used for Greedo was a language which was "invented" from Peruvian *Incan*. That was a very nice language. I used it a couple of times in the picture. It was used for a gold, bug-eyed robot in the Sandcrawler. He said a couple of things but you didn't understand it. He was also speaking *Incan*. Some of that was just stolen. I just took words without knowing what their meaning was and strung them together with the help of an assistant. I found a student at Berkeley named Larry Ward who is a linguistics expert. He could imitate voices. So I brought him over, we worked out the language, and he mimiced *Incan* very effectively. Larry became the voice of Greedo. It was phased electronically so it had a strange, alien quality to it. In phasing, you take two identical copies of a voice and put them out of sync just a tiny bit.

How would you go about devising a language for R2D2?

R2 was the most difficult one of all. He was a potpourri of little sounds. That was the one thing in the picture that was going to be electronic, but it had to be totally understandable in terms of emotion. You didn't understand exactly what he said but you got the *feeling* of what he said.

Was the "touch phone" sound ever considered for R2D2?

The touch phone idea was interesting but it's too familiar and well-known to people. R2 is unsuccessful only to the extent that a lot of people *hear* him as a touch phone. He's a very delicate balance of mechanical and organic characteristics. The touch phone is too cold. We had an experimental version of R2 as something like a touch phone but it didn't have any meaning.

How was R2's voice finally achieved?

Basically the essential character, as it turned out, was to combine the electronic

with the organic—the organic being the warm, lovable, somewhat human side of his personality. The electronic part was generated by a synthesizer. The other part of his voice was derived from human-produced sounds. There was also a fair smattering of mechanical sounds in there, squeaks produced by scraping dry ice against metal, all blended together. What I did was sit down and decide that R2 was going to say something like "Look out!" when a soldier approached. Then I'd try to come up with a sentence that had some emotional feeling to it. I'd make some beeps and run my voice through a synthesizer and go into my library of cute mechanical sounds and put them all together. I also blew through a waferpipe and got this neat little whistle.

The synthesizer is a keyboard instrument. How did you run your voice through it?

You can run a sound from a mike into the electronics of the synthesizer. You can then blend it with tones generated from the actual keyboard as well as subjecting it to the various electronic processes that the synthesizer has—voltage-controlled filters and amplifiers—all the little things that go into producing music. So I "performed" on it until I came up with something that I felt worked right. You could make little whistles and things and put it through the synthesizer and surround the human sound with a slight "electronic envelope" as it is called.

The roar of the ships in the opening shot were spectacular. What did they consist of?

There are two sounds, one of the Rebel Blackade Runner and one of the Star Destroyer. I recorded a lot of material at the Mojave air races, high-speed aircraft flying ten feet above the ground. I took those and slowed them down tremendously. A lot of the very high frequencies would therefore drop down to a more audible range. I then mixed that with the "whoosh" of jet planes and a thunderclap. The first ship was the thunderclap and the jet sounds. The second sound was basically made up of two elements: a low frequency rumble and part of the sound of the Goodyear Blimp slowed way, way down! I spent a long time recording the Blimp. It's one of my favorite sounds. It created the sense of something gigantic moving. The mixers did a lot of special enhancements of low frequencies for that particular effect too. In other words, when they did the final mix, they would use special filters and exaggerate the rumbling aspect of it. You could do that with 70mm stereophonic sound but not with an ordinary optical track.

How about the lasers?

There are lots of different kinds of lasers. Han Solo's laser was different from the Empire's. The basic concept of the lasers was to come up with something explosive without having it sound like a gunshot. It wasn't going to be Dirty Harry's Magnum. Again, this entailed a lot of research. What really worked well in the end was the striking of a long cable suspended from a radio tower. You have to find a tower with just the right frequency, and I found one.

How did you hit upon that idea?

I was on a hike with my father and he accidentally walked into this cable! It made a great sound! I told myself that this has got to be exploited. It was almost a whipping sound at a very high pitch. To

use that sound for the lasers, we had to slow it down a great deal. That was the *basic* sound but a lot of things were added to it—bazookas, screeches of various kinds, etc. On some occasions, there were human screams mixed in with it in order to give it a freakish quality.

*That sounds like some of the tricks soundman Gene Garvin did for the Martian scream in George Pal's *WAR OF THE WORLDS*. What were some of the specific sound elements that you used for the different types of lasers?*

There were so many, it's almost impossible to describe them. The "twanging" lasers were used for the Stormtrooper guns. In some cases, there were pistol shots mixed in with animal screams speeded up. In other cases, I used electrical arcs combined with dry ice squeaks and actual artillery shells in flight. Bear in mind that the laser has an "attack." There's a beginning, a middle, and an end, all combined. The sound does not exist. You can't go out and find a radio tower to get that complete sound. The tower cable was used for the "quick attack." The middle and end of the sound effect were entirely different.

And the landspeeders?

Most of that was the sound of jet planes taxiing around the runway. A great deal of it was freeway traffic noise recorded through pipes. Just lots of crazy stuff.

Did you have sophisticated recording equipment to work with?

Nothing that sophisticated, really. I had several Nagra's, a couple of Teacs, a synthesizer, and digital delay units. I was able to transfer quarter-inch tape to mag track myself. We had a Kem Universal eight-place editing flatbed, a very nice German machine which I liked better than a movieola.

Was that all done at ILM?

Actually no, it was all done at home! During the first year of production, they were all in England and the people at ILM were inventing things. I would work at home and spend a little time at ILM shooting computer readouts for the spaceship dashboards. When George came back from Europe, we went to San Francisco where all the editing was done. We worked there for six or seven months just putting the picture together, adding sound effects, trying out different pieces of music, and studying the different versions of the film. We eventually arrived at what we thought was more or less the final product.

*What would you consider the most unusual aspect of how *STAR WARS* was put together?*

I would say it had to do with the approach to the picture, that we started working on the sound long before any film was shot, which is never done. Usually the sound comes *last*, except maybe when you are dealing with animation. While the editors were editing the various versions of the picture, I would cut and mix the reels of music and sound effects and speech. Then we'd sit down and watch the temporary version and react to it as a complete entity, which is never really done. So we were able to evaluate early cuts of the picture editorially before it was finished.

Did George Lucas guide you, or were you totally on your own?

Everything that I would do, George would come in and listen to. Then we would discuss it and he'd approve or disapprove. So he would direct me. Of course,

I'd always have alternate sounds. He would respond to what I had and give me his reaction to it. One example of this was R2. He was just sort of hammered out syllable by syllable. There were the usual difficulties of being consistent, making it sound like the same character using isolated sounds. George would listen and react and provide guidance.

Do you have a "favorite" sound effect?

I have many. Sound effects in Hollywood movies are used over and over again. Universal is using the same thunderclap they recorded for *FRANKENSTEIN* in 1931! You can hear the same face punches and door slams in many old movies. I love that crazy kind of continuity. I have a favorite *scream*. In fact, I used it in *STAR WARS*! It's in a lot of Warner Bros movies. It's the scream used in *THEM!* when the guy is being eaten by ants, and it's used in a lot of westerns whenever a guy gets an arrow in the back. I used it for the Stormtrooper who falls into an abyss.

Do you think your work in sound effects is indicative of a new trend in using sound more creatively?

I don't know. Unfortunately, the tradition nowadays is to get the film out too quick—getting the car door slams and getting the footsteps in—there's never any time for the poor sound people to really stop and think creatively. It's been going on for so many years, everybody just takes it for granted. Almost nobody goes out, researches, and comes up with some new concepts for any particular picture. Only a few filmmakers like George Lucas, Stanley Kubrick, and Francis Ford Coppola, realize the importance of sound. They very carefully supervise it and make sure that they get something original and dramatically effective in terms of sound. That's why their pictures jump out at you.

*How would you sum up your work on *STAR WARS*?*

It was all interesting and it was all oddball. I would say that I was highly motivated to work on a project like *STAR WARS*, being a big fantasy fan. It was an incredible amount of work and a lot of fun. ■

JOSEPH JOHNSTON

Effects Illustration and Design

"There were probably one thousand storyboard drawings. I had three assistants helping me on storyboards, almost three sets of three-hundred-fifty board scenes."

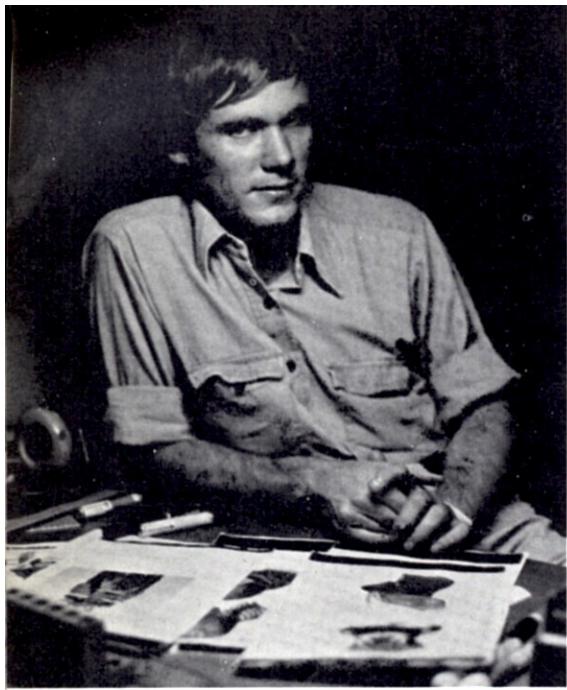
Joe Johnston is one of the key designers of the spacecraft that appear in *STAR WARS*. Born in 1950, he lived in Texas until he was fifteen, then moved to Los Angeles. He attended Pasadena City College and enrolled in some influential art classes which helped shape his career. "Before that, I wanted to be an oceanographer but I soon changed my mind." He then spent a couple of years at California State College at Long Beach in the Industrial Design program, a breeding ground for many of the personnel who worked at Industrial Light and Magic.

Joe worked on two science fiction films before *STAR WARS*. Both were made for television. One was a remake of the original *WAR OF THE WORLDS*, and the other was *STAR WATCH*, a ninety-minute "Mystery of the Week" for ABC. He recently completed the designing for *GALACTICA* at ILM under the supervision of John Dyk.

INTERVIEW BY PAUL MANDELL

Joe Johnston touches-up the large model of the Rebel Blackade Runner.





Effects illustrator Joe Johnston.

stra. Many of Joe's storyboard drawings have been compiled into *The Star Wars Sketchbook*, published by Ballantine.

How did you get connected with STAR WARS?

People I knew from those two television productions worked on the film. Bob Shephard was head of the *WAR OF THE WORLDS* production and he became the production coordinator on *STAR WARS*.

What was your first task on the film?

When I first started on *STAR WARS* in August 1975, I began by storyboarding the main battle sequence using the 16mm footage that George Lucas had compiled from World War II dogfights.

What were some of those films?

A lot of it was from *BATTLE OF BRITAIN*. Some of it was from *BRIDGES AT TOKO-RI*, *TORA! TORA! TORA!*, *JET PILOT*, *633 SQUADRON*, and some of it was actual combat footage. Quite a bit of footage came from the movie *DAM BUSTERS*.

Did you study the black and white dogfights and just sketch each shot?

We started out by watching it. I must have watched it ten times on a movieola just to get an idea of the action. Then I would take it shot by shot and try to interpret the movements of the Jap Zeros and Mustangs into X-wings and T.I.E. fighters. That was kind of fun.

What did you do next?

After the main battle sequences were storyboarded, I started re-designing the spaceships. Colin Cantwell did some prototype spaceships. He built them at home. In fact, they're pictured in that photograph of me in *American Cinematographer* [pp 703] where I'm acting out a dogfight move with the ships in my hands. They were nice, but they were a little too sleek, kind of NASA-like. So we kind of romanticized them. All the ships were eventually re-designed and some new ones were added when script changes occurred. I did most of the model painting and the forced perspective paintings, all kinds of odds and ends.

Did you build any of the actual models?

I did a lot of model building, but it really wasn't the heavy construction stuff. I

just kind of added parts to a lot of them between design work and storyboard stuff. The majority of the people in the model shop were detailers and assemblers of ships that had been cast. The three fighters—the X-wing, the Y-wing, and the T.I.E. ship—were all made up of parts that were cast in foam. So it was just a matter of assembling them. Grant and a couple of other machinists did the heavy construction work, laying the foundations of the ships.

How many scenes would you say were storyboarded?

All in all, there were probably one thousand storyboard drawings that were done. At one time, I had three assistants helping me on storyboards, almost three sets of 350 board scenes. We kept redoing them, changing shots and adding shots. I ended up redrawing all the boards that had been done! The storyboard work took well over a year altogether, on and off.

Was it easy to storyboard the dogfights? In essence, you did have it laid out for you visually.

That's how it started out, but George Lucas departed from that combat footage after a while. He began to make up shots of his own. What finally got on the screen was about half of that original black and white footage. I'm glad he did that. I think the effect he achieved by changing a lot of the shots was much nicer. A lot of the movements of the ships seemed to work for the World War II planes but didn't work too well for our spacecraft.

How did you go about doing the forced perspective painting for the horizon of the Death Star trench?

We shot the model of the trench with a 4x5 camera and had that blown up. The enlargement was about 30"x40" and I painted over it. I actually ended up painting out most of the photograph.

The trench model itself changed about half-way through. It was originally wide and shallow. When Lucas saw it after we had gotten a bunch of shots of it, he decided that he wanted it narrow and deep. So we changed the model, which meant changing all the paintings! So there were three sets of paintings at four different heights, twelve paintings in all. They were done over a period of about three months. They would take about two or three days to paint. That work started in September of 1976 and went on through Christmas.

*What would you consider your most difficult task on *STAR WARS*?*

Actually, I would have to say it was the storyboards. The most interesting stuff, however, was the design work. Because of all the changes in concept and the redrawing of the same shot over and over again, the storyboards just got to be kind of a hassle. I should mention that we only did the effects storyboards out here. All the live action storyboards were done in England.

How did you coordinate your designs with the work of the model builders?

The way it usually worked, I would do the sketches, get them okayed by George Lucas and John Dykstra, take them into the model shop and talk to Grant McCune or someone else who was assigned to that particular model about how it was going to be built. Many of the models were built directly from sketches—most of the guys in the model shop had enough on the ball to figure things out without the need for de-

tailed draftings.

Did you do any work on explosions?

Yes, I did. We started off testing with acetylene gas and plastic models of the Boeing 747 to see if that would work. We finally ended up using just your standard squib, a mixture of gasoline and mothballs and vermiculite. It gave a pretty good scale explosion. Some of them were done at ILM, but most of it was actually done on a soundstage out in Hollywood. We rented a stage and hung up a blue screen and spent a few days down there shooting explosions.

Were there any oddball things that you had to do?

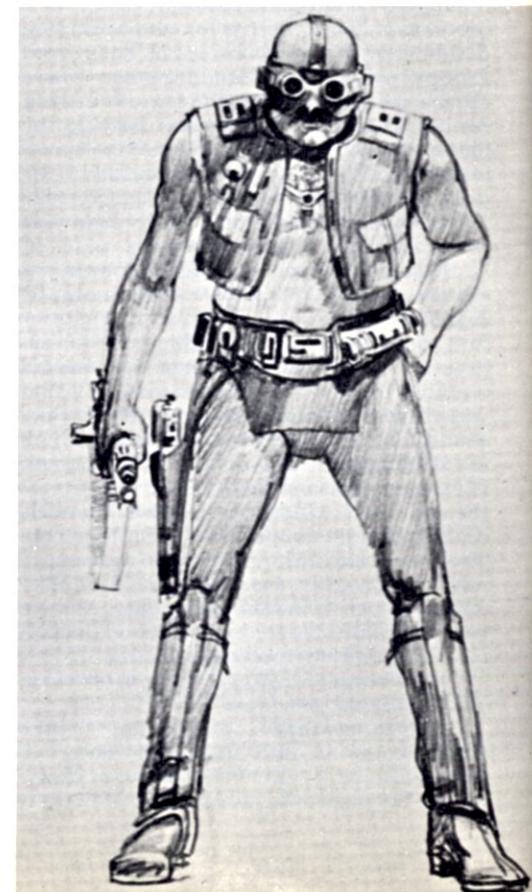
I did most of the work on the star field. That was a matter of taking a sharp object and punching holes in a painted piece of plexiglass. It had to be redone a few times to get a natural-looking star effect.

Did you do any of the matte paintings?

I worked on one. I don't know if it was ever used or not. It was one of the Pirate Ship in the Death Star docking bay. I think Peter Ellenshaw Jr. came in later and painted over it! Ralph McQuarrie did all of the planets. They all blended together so well, you really couldn't distinguish between Ellenshaw's and McQuarrie's work. And they were done so well, you couldn't tell that they were matte paintings, anyway.

How would you sum up your work on the film?

In essence, what I did on *STAR WARS* was meet with Lucas and Dykstra and take everyone's best ideas and put them down on paper. I considered myself an interpreter of everyone's ideas, including my own. A lot of people ask me if I was the creator of the *STAR WARS* spaceships, and I really wasn't. Everyone else's imagination was kind of funneled through mine and Ralph McQuarrie's. We just put pencil to paper and drew the ideas that a lot of people gave us. It was interesting and a lot of fun. ■



RALPH MCQUARRIE

Production Illustration and Planet and Satellite Art

"My inspiration comes to me like bubbles rising in a champagne bottle. I lay down and rest. The ideas come from somewhere inside me and rise slowly to the conscious level. Then I awake and paint my pictures."

Nestled in a neat studio in the heart of Los Angeles, Ralph McQuarrie works creating wildly beautiful paintings and sketches which depict alien creatures and wholly original landscapes and civilizations. His work on George Lucas' *STAR WARS* was seen in many of the matte paintings and also felt in much of the set design. McQuarrie worked closely with George Lucas to visualize the script in a series of dramatic paintings which have since been published as *The Star Wars Portfolio* by Ballantine Books.

Ralph McQuarrie had always wanted to be an artist. Even as a child in Montana,

INTERVIEW BY CARL MACEK

*Ralph McQuarrie in his Los Angeles studio. Early *STAR WARS* sketch concepts of a rebel starfighter (left) and an Imperial trooper (right).*

Ralph was exercising his artistic drive by going to summer school at the age of six to learn how to draw and work with modeling clay. Fifteen years later he became a commercial artist. His work as a technical illustrator lasted, off and on, for the next twenty years. He eventually zeroed-in on the aerospace industry. As Ralph put it, "I was always interested in military aircraft and rockets. I was kind of engineering oriented." He eventually got involved in films, first by doing some theatrical one-sheet posters and later by working on preproduction paintings. His association with George Lucas seems to have fulfilled a certain desire to create fabulously detailed yet totally alien visions.

A soft-spoken, gentle man, Ralph McQuarrie is quite lucid about his art and its relationship to the elements of science fiction and fantasy. This interview, one of the few granted by McQuarrie, should serve to point out not only the detail and creative input present in his art but to define an artist engaged in a lifelong project of finding the right outlet for his varied talents.

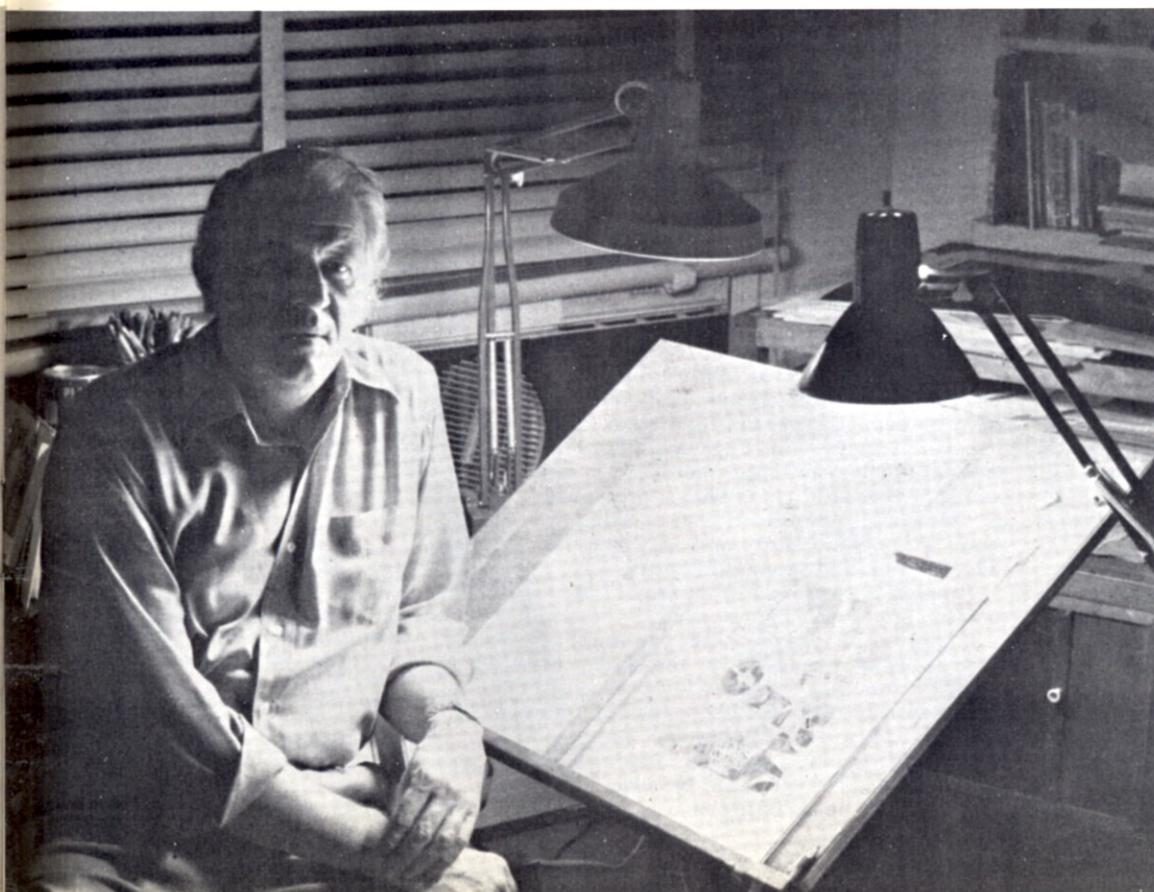
After completing his work on *STAR WARS*, McQuarrie did pre-production designs and paintings for *GALACTICA*, and is now hard at work designing and painting new creatures, new cultures, new contraptions, new civilizations and new adventures that will launch the production of *STAR WARS II*.

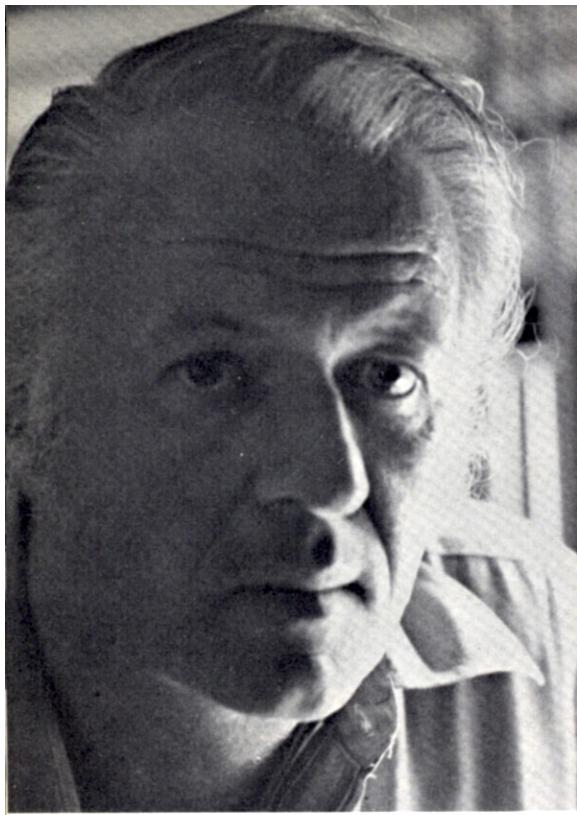
How did you get involved in films?

I worked for the Boeing company until 1965. I began to feel like getting back into commercial illustration, not just doing art for the aircraft industry. I used to do story illustrations for Kaiser Graphic Arts in the fifties, but I wasn't very happy there. I was really interested in fine arts, but I didn't know how to get started and how to sur-

vive at it, so I had to keep going back to work at something. About 1965 I came to Los Angeles. I had a little money saved, and just sat around my little house in Venice working, just sort of dreaming and developing ideas. It was something I had wanted to do for a long time, without having any end in mind. No results, no money, no place to sell it—no nothing—just doing what I wanted to do. But I got a call soon enough from some people who were interested in having me work for them. They had a project to animate the Apollo flights for CBS News and they wanted an illustrator that could paint rockets. I was a pretty good renderer and I'd been recommended by someone at Boeing. I went to work for them for quite a few years, off and on, doing those Apollo flights. Working there, I got interested in movies and started thinking about making some of my own. I borrowed a friend's camera, I did storyboards, the whole bit. I also did some storyboards for an educational film as well as promotional work. That got me meeting people in the film business.

None of these contacts were in feature films until I met Hal Barwood and Matthew Robbins, who had been working for George Lucas on *THX 1138* [Barwood is credited for the titles and animation]. They had a script which was interesting. People still think it is a good script. It was called *STAR DANCE*. [Barwood and Robbins also had a film called *CLEARWATER* in preproduction at Universal in 1974, "a science fiction tale set in the year 2215 AD telling of the conflicts between the survivors who populate a devastated Earth . . ." as reported 3:3:46] I was asked to do some paintings for them, nice big paintings of some of the key scenes, like I would do later for George. For them I did a vehicle which was supposed to go out on this





Ralph McQuarrie.

grassy planet surface, and aliens in space suits. The film didn't get done. Now they are working on other projects. Anyway, Hal and Matthew introduced me to George Lucas, about two years before he actually approached me to work on *STAR WARS*. George mentioned at the time we first met that he wanted to look at some of my slides. He said he was interested in doing a science fiction film—he didn't call it *STAR WARS* at that time—with a kind of comic book subject matter. When he got ready to do the film he came and talked to me, which was a big surprise because he had done *AMERICAN GRAFFITI* in the meantime, which was very successful. Naturally I agreed to do what he wanted.

What kind of assignment did you get?

George wanted me to do what I did for Hal, just support his script with visuals. George felt that it was the kind of script that people weren't very impressed with. The idea seemed kind of funky. He envisioned the picture as a real visual experience, much more so than a story. It wasn't true science fiction. George called it a science fantasy, and even the fantasy aspect was non-traditional. He had a lot of ideas. He had comic book pages and other source material he wanted me to see. Once I got to work he liked what I was doing, and he would come by every once in a while to check up on the work. My ideas seemed to be in line with his. George was very specific about most of the work.

How many paintings did you do initially for George?

I think we had something like four when we first went in with paintings to Fox. We used the two robots coming across the desert, the light sabre duel, the Storm Troopers in the hall with drawn light sabres and the attack on the Death Star.

What function does a preproduction painting serve? Does it give the filmmaker a vision of his concept or does it merely serve to sell his idea to a studio?

I think it did both for George. He liked

these paintings and they embodied what he was interested in putting across on the screen. I think it gave him a chance to develop his ideas at his leisure, so to speak, rather than working in the heat of production where you've got a lot of people involved and money's being spent at great rates. Then he would've had to struggle with production designers and all kinds of craftsmen. I don't think that he necessarily felt he had to engage an expensive production designer at this preliminary stage because he had his own ideas. George could have drawn everything himself, literally! He draws quite well, laboriously and a little bit crudely, but he can draw.

Lucas gave you a few images, from comic books and other sources and you took the ball from there?

Not exactly. George had very specific ideas, the Darth Vader character for instance. George described him as someone in an airtight garment with a lot of wrapping and black bands and folds kind of fluttering. He said, "Darth Vader will be coming-in like the wind, kind of sneaky, yet big and impressive."

Then Lucas worked closely with you in creating the environment and designing how the people would look?

Yes. In the course of our conversations about the plot we came up with some interesting problems. One of the first actions called for in the early script was Empire troopers burning through the outer shell of the spacecraft that Luke and 3PO were in, and then we realized that the air would escape. The people in the passageway would have to be equipped with some sort of spacesuit. That's why those masks were installed. In the discussions we thought we could use "breath masks." George coined the phrase, and he said they might be kind of ornate. I didn't know how ornate, or what the nature of ornateness would be in this universe, so I gave them a technical look with tubing coming forward that might support the way they are put together and the way the air comes down through them, with vents, etc.

Are you referring to Darth Vader's mask and Luke's snorkel device in one of your preliminary paintings?

Exactly.

Looking at the artwork in the offices of The Star Wars Corporation, it seems that you provided not only fully rendered paintings but also numerous sketches and designs.

George would give me a specific project. He would have been happy to let me go ahead and do something on everything in the picture, and I almost did. Although my renderings were not always used. Most of the art I drew was used in some form however. John Barry [the English production designer] picked up things that I had in my paintings and used them with a great deal of flair and amplification—his ultimate Death Star architecture, and so forth. He did a lovely job of staging this stuff.

There is a great deal of architectural or structural design in your paintings.

I wanted to make these paintings as close to what would be on the screen as possible. That was a product of, or a result of our wish to make the people at Fox feel that we had a picture that was going to have a quality image, one that wasn't going to be trashy science fiction, because it did have a comic book script. It was going to

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—Ralph McQuarrie

be a real polished product. Maybe not like *2001*, but we didn't feel that we had to polish our props as much as they did because we were going to have a very fast-moving picture and objects weren't going to be on screen as long, or used throughout the whole picture as they were in *2001*.

How many paintings did you actually complete?

I think there are about 21 or 22. All of them were done before the film was even started. In other words, before a production designer was hired. The day John Barry came on was the day I really got off the project and ceased working on designs and paintings for the film. I then started working on the matte paintings and on other projects.

Do you feel that Lucas and his crew attempted to capture your visual designs on film?

Yes, they did, the ones that George liked. Those paintings were a result of our efforts to get down on paper what George wanted, so that they were available when he needed them. Anything that was done later, like Joe Johnston's work, was done in terms of our preliminary efforts.

It is noticeable in your work that changes took place in the characters themselves. A good example is Darth Vader. Your initial drawings were sleek, almost effeminate, with curving lines rather than bold geometric patterns.

I'm not so fond of the lines they gave Vader's helmet and his mask. I think it did more to enhance his great size and to keep his head up—a lifting look rather than a jutting down look that I gave him. It really works better in that sense.

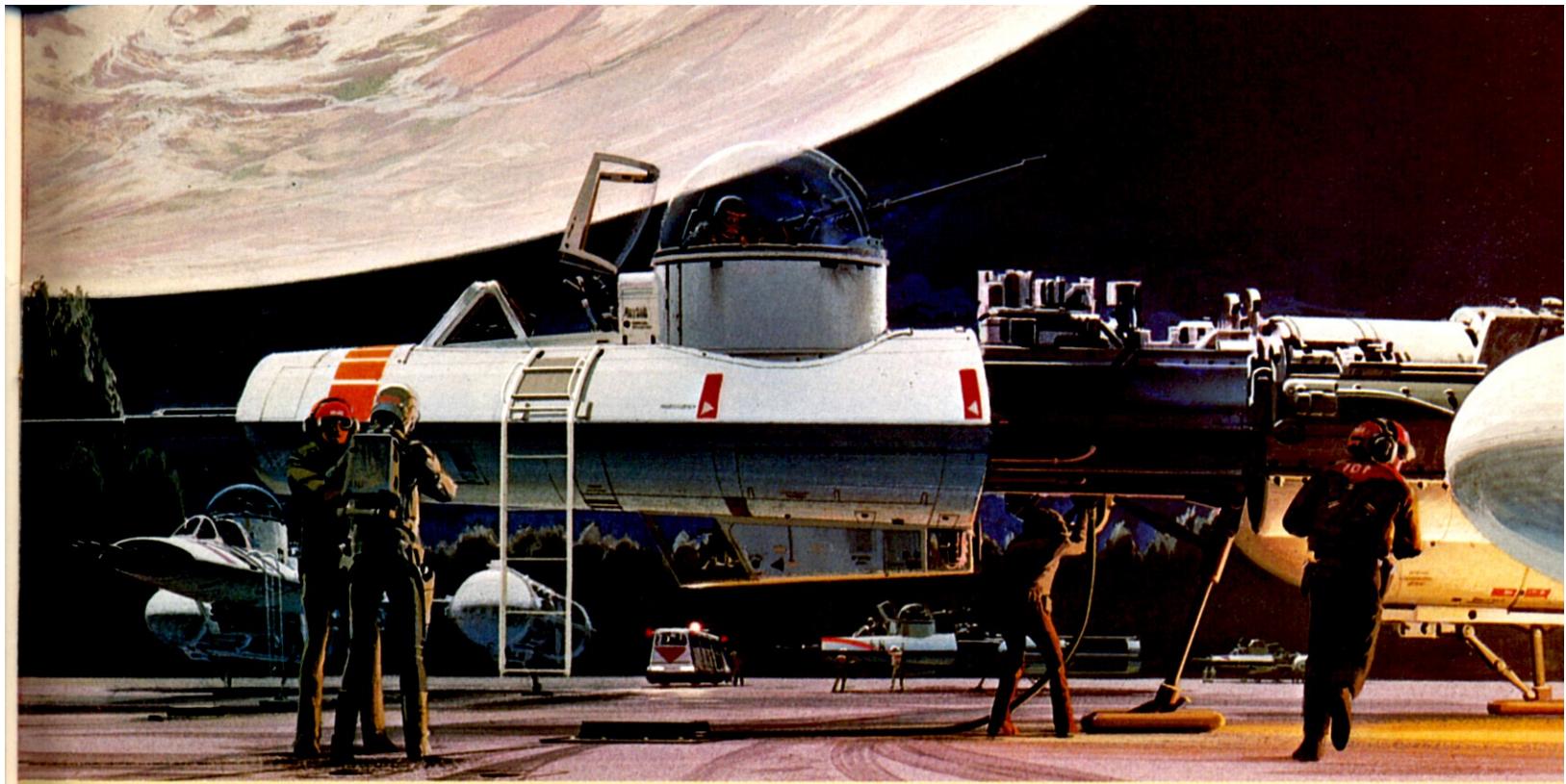
*Your concept of C3PO looks like the robot in *METROPOLIS*.*

That's right, and that is what George was after. He said if it was just like the *METROPOLIS* robot it would be okay. But I wanted it to look male—not clumsy, and not a big robot clomping around. With 3PO I did a lot of sketches and I think I made him quite elegant.

Your Wookie seems less hairy. There is one painting in which it looks rather different than the actual Chewbacca.

At the time I did the painting George

*Top: The rebel spaceport on the fourth moon of Yavin, with several Y-wing fighters scrambled and ready for action. The planet Yavin looms large in Ralph McQuarrie's pre-production painting, one of twenty-two he executed for *STAR WARS*, and the only one not published in The Star Wars Portfolio of his work by Ballantine Books. Bottom Left: McQuarrie's early sketch of Luke as a "Starfighter." Bottom Middle: McQuarrie's early sketch of a space pirate, with character detail. Bottom Right: McQuarrie's original concept for Chewbacca called for clothes and a fierce lemur-like appearance. McQuarrie also executed matte paintings for *STAR WARS*.*



really liked the lemur eyes, little rubber teeth, and so forth. Chewbacca was kind of frightening, more so than he was in the film. I think the way it had to play on the screen, Chewbacca was ultimately better looking, almost cute.

What about your early painting of Luke Skywalker as a girl?

That was really quite a major plot change that George had to go through. There are a lot of major shifts in the plot. George just couldn't do all that he wanted to do. Fox thought there should be some romantic interest. I think this is why George made Luke a girl. Then Han Solo would be the robust hero and we could have a little tension between the two characters. That was okay, but at some point George decided to make Luke a boy again and bring in the Princess as a third character.

How did you go about visualizing the alien landscapes and situations, like the Cantina sequence for example?

George wanted this kind of rough, little edge-of-town kind of place, a sort of clay adobe structure. He thought at the time that he might even find a location that would fit his needs. I thought, in the back of my mind, that this place should have little alcoves, little places back in the dark. But I also wanted a central area. As an illustrator, I like to have something for a focus, to spotlight. So I thought of the Cantina as being a central hall which is fairly high, with a skylight and daylight filtering down, dirty light through dirty windows. As you sat back it is very dark and you looked into the bright light, this lonely diffused daylight where the action takes place, filtered with hazy smoke. My first painting was fine, George liked it, but he thought it needed a few little touches to make it look less like a resting place and more like a place that was also part of a society that was highly technological.

Were you dissatisfied with any of the work you produced for George Lucas?

Not dissatisfied, not in terms of my paintings. I would like to be as good a hardware designer as Joe Johnston, but he

filled that niche and that was a good place for him. He will ultimately paint as well as I can. We are two different people, but we're quite similar in many ways.

Was there anything that you wanted to do in the paintings you were unable to get approval for?

George gave me specific assignments on most of the scenes that I would paint. He would say, "I'd like to have a shot of this, or I'd like to have a shot of that. If you see anything else, if you want to do something on other aspects and get time, go ahead." So there were a number of scenes that I did on my own, that weren't in the script.

What is important to you as an artist?

I love color. I like subtle color schemes that aren't really splashy. I think I'm very sensitive to color. My mother told me I could name the colors before I could say anything else. I was interested in color as a child, before I can even remember anything else. I will take a scene that I like and decide about the entrance of light. The desert scene is a good example with its raking light. I would never choose to make it high noon because it doesn't look as interesting. But when you've got a raking light, when a moon will stand out in the sky, and with the long shadows, and the warmth from the light which unifies the painting, that is what I like to do.

There is also a high clarity to your work. You really define your subject.

I get interested in the forms, and I sculpt what I'm thinking about to see how objects are formed. I don't let the details go by. I want everything defined that is out there. Some people say to me, don't worry about that stuff, it's the overall effect that counts. But to my way of thinking, the overall effect is the result of all those details. I realize that a lot of little detail doesn't help that much. You can paint rather loosely and still get the effect of all the detail, which I try to do as much as possible. I try not to get bogged-down and do it all. I like paintings that define a dreamlike subject very convincingly. You are convinced that you're there and yet it's a strange place.

GRANT MCCUNE

Chief Model Maker

"Probably the most attributable factor in the success of *STAR WARS* was the fact that we weren't in a studio. ILM was really free and loose and easy. Part of the creativity of our people resulted from that atmosphere. Several of the executive types called it 'The Country Club.'"

Grant McCune was in charge of the construction of all the model spacecraft and miniatures used in *STAR WARS*. He was born in 1943 and attended the University of California at Northridge where he took a lot of photography and film classes. Grant graduated after spending "eight years getting a Bachelor's degree" and got a job in the medical field in order to stay out of the draft, a familiar tune to many young artists who were caught up in the same situation. About four years ago, he started building models for money. "I just always did modelmaking. A lot of people that I knew were into special effects and were working at it for a living. I decided to try to do the same thing."

Grant became good friends with John Dykstra and about seven or eight other individuals who eventually worked on *STAR WARS*. He worked with John at Doug Trumbull's Future General organization during the *SILENT RUNNING* days, gaining valuable experience in the construction of miniatures. In 1975, he became the head of the model shop at Industrial Light and Magic where he is presently supervising the miniature work for *GALACTICA*.

*Did you work from Colin Cantwell's designs during the early stages of *STAR WARS*?*

Yes, however there were substantial changes before any major construction began. Colin was into the project about six months before anybody. He worked with George Lucas and designed a bunch of preliminary shapes and models. From these, they picked what they wanted and altered them substantially in drawings.

What was your modus operandi in build-

INTERVIEW BY PAUL MANDELL

Paul Mandell is a film historian and stop motion animator living in New York City.

Chief model maker Grant McCune adjusts a robot for an insert used in the sequence set in the interior of the Jawa's junk-laden Sandcrawler. Apparently, insert closeups of additional robots were filmed at ILM for this sequence much as additional makeup insert closeups were filmed to augment the Cantina sequence.



ing the ship miniatures?

We attacked most of them from the standpoint of how important they were, how many shots there were of them, and how tight you get in on them. We set up the scales for all of the different models. We took them one at a time, the most important one being the X-wing fighter because it had to do that mechanical trick where the wings "X-ed."

Was that the most difficult model to make?

Yes, it was incredibly difficult. There were eleven wires that had to go into it to run all the things that it did. It had five wires just to make the wings "X" and four different hot wires for the laser lights, the cockpit lights, and the torpedo lights. The interior of the X-wing was just a nightmare of stuff!

What did the prototype of the X-wing look like?

Colin had made one that was like a dragster body. It was real sleek and narrow. From that we "grossed" it a bit, thickened up the back end, and made the X a lot bigger so we could get all of the stuff inside. The Y-wing was unimportant. It was real easy to make, as were the T.I.E. ships.

How big was each ship miniature?

The X-wings were about twenty-two inches long and about nineteen inches wide. The Y-wings were about the same dimensions. The T.I.E. ships were something like fourteen by twelve inches. They were all 1/16 scale. We kept everything we could at that scale for realism. That's why the Rebel Blockade Runner is so big. The only ship that differed in scale was the one we called the Star Destroyer, which was the biggest ship shown in the film. The scale on that was more like 1:400. We didn't consider the Death Star a "ship." The scale on that was 1:2400. The three foot plexiglass model represented an actual diameter of one mile!

How many models would you say there were altogether?

About seventy-five. That includes the Death Star pieces, foreground pieces, miniature cars, and an incredible amount of other stuff. There were between six and twelve modelmakers working at the shop: John Erland, Lorne Peterson, Dave Beasley, David Grell, Steve Gawley, Paul Huston, Dave Jones, Jim Malish, and several others from other departments around ILM. Joe Johnston actually did a lot of work on them. Also, Bill Shouri and his brother Jamie—one was a machinist and the other an electronics expert. They did a lot of work. All of them got credit on the film, not necessarily as model makers, except David Grell and Jim Malish.

Did any science fiction films influence your modelwork?

I'm not a science fiction buff at all! [laughs] Nothing really spurred me on. This was actually my first big attack on modelmaking. My main concern all the way through was to make them all look believable. Miniature ships usually look all shiny and bright, brand new out of the mold. So we worked on them. I also tried to make them all as *versatile* as possible. You could mount almost every single ship in STAR WARS on any of six sides. This versatility in the models anticipated possible changes in the storyboards and actions required, and it provided a certain freedom to the stage cameramen shooting the minia-

tures, but as it turned out the models were capable of far more than was ever needed in the end. My problem was trying to get them all done with that much versatility. A lot of it was just trying to get the crew to do the right thing. No one really knew what to do at first. We really didn't get very much from George Lucas on exactly what he wanted. He gave us more of the *feelings* of what he wanted. So that was kind of tough.

How about the Death Star surface. I'll bet that was kind of tough?

Most definitely. The problem was that you had to mass-produce pieces in order to make the huge surface. You couldn't carve the whole thing. So in order to do that and make that look believable, it took weeks and weeks of rearranging, cutting it down, and ripping it apart and starting over again.

What was the Death Star surface made of?

It was made of polyurethane foam. We made up two-foot square molds that had all these building shapes on them. There were eight or ten different ones of those. We would cut them up into different sections. They were all kind of modular and put together in different ways.

How about the ships?

The Pirate Ship, for example, was made from a huge laminated piece of plywood with plexiglass domes on it. The T.I.E. fighters were made mainly out of epoxy done in molds, and those were combined with a lot of previously-cut pieces made out of plexiglass. From that, we took molds to make the ones that exploded.

So those were breakaway ships?

Yes. They were all back-cut from the inside and lined with gasoline and naptha and flashpowder and all sorts of stuff. Actually, the biggest problem we never solved was how to make them explode properly. It was real difficult to make a scale explosion on that small a scale.

How many takes of those miniature explosions were going on?

I would say that we probably blew up thirty or forty ships. Of those shots, we used only six to ten original explosions. The rest of them in the film were double-exposed (DX) explosions.

The Death Star was seen at three different altitudes, wasn't it?

It is actually seen at four, represented by four distinct elements. The spherical model, three feet in diameter, is the highest altitude of the Death Star. We made it out of plexiglass. Next is what we called the "high altitude" level, which was a photograph of the next lower altitude pasted on a curved piece of plexiglass. This next lower altitude was referred to as the Death Star "threshold," and was a 4:1 reduction of the actual Death Star surface. The "surface" would be the fourth and lowest altitude, and was a huge model composed of various two-foot square sections cast from molds. It was laid onto four by eight foot sheets of plywood on top of roll-around carts, and was about forty by sixty feet in size, with three different trenches that fit in the middle. I don't think anybody has ever put that much effort into miniatures, and then had them used so well photographically. The Japanese have put in billions of hours making miniature sets, but when they're photographed, the whole effort is wasted. In STAR WARS, we really relied heavily on tight miniatures.



Grant McCune and Y-wing nose section.

How would you compare the ship models in 2001 and SILENT RUNNING to the ones you used in STAR WARS?

They were nowhere near the scale of the ones in STAR WARS. I saw the SILENT RUNNING ship being built and it took them as much time to build that one ship as it did for us to build all of our ships. The key to it was that I was working hand in hand with John Dykstra and Richard Edlund and Joe Johnston. Everybody in the shop was working together. If Richard would say "Hey, we've got to get in close on this side of the ship," the whole crew would immediately dress up one side. That just doesn't happen in studio situations. The cameraman usually doesn't say anything, he just goes ahead with what he's got.

It sounds like there was a lot of ad libbing going on?

After the first three months of shooting, it turned totally to an ad lib situation. George Lucas would have a storyboard laid down and the pieces that he wanted done wouldn't look too good. So we thought it out and redesigned it real quick and showed it to him to see if he liked it. He really was cool and he'd go for it. He really wasn't terribly pedantic about stuff like that.

Were there any "casualties" in the model shop during STAR WARS?

Actually, no! [laughs] It was really unbelievable. Nobody lost any fingers. People got Super Glue in their eyes. People got glued to their chairs. We had a vacuum chamber for evacuating gases from the rubber in the molds. It had a three-foot plastic dome on it that blew up in a guy's face. It didn't touch him, but it blew the shit out of everything around him! That was an incredibly lucky thing.

Probably the most attributable factor in the success of STAR WARS was the fact that we weren't in a studio. ILM was really free and loose and easy. Part of the creativity of our people resulted from that atmosphere. Several of the executive types called it "The Country Club." ■

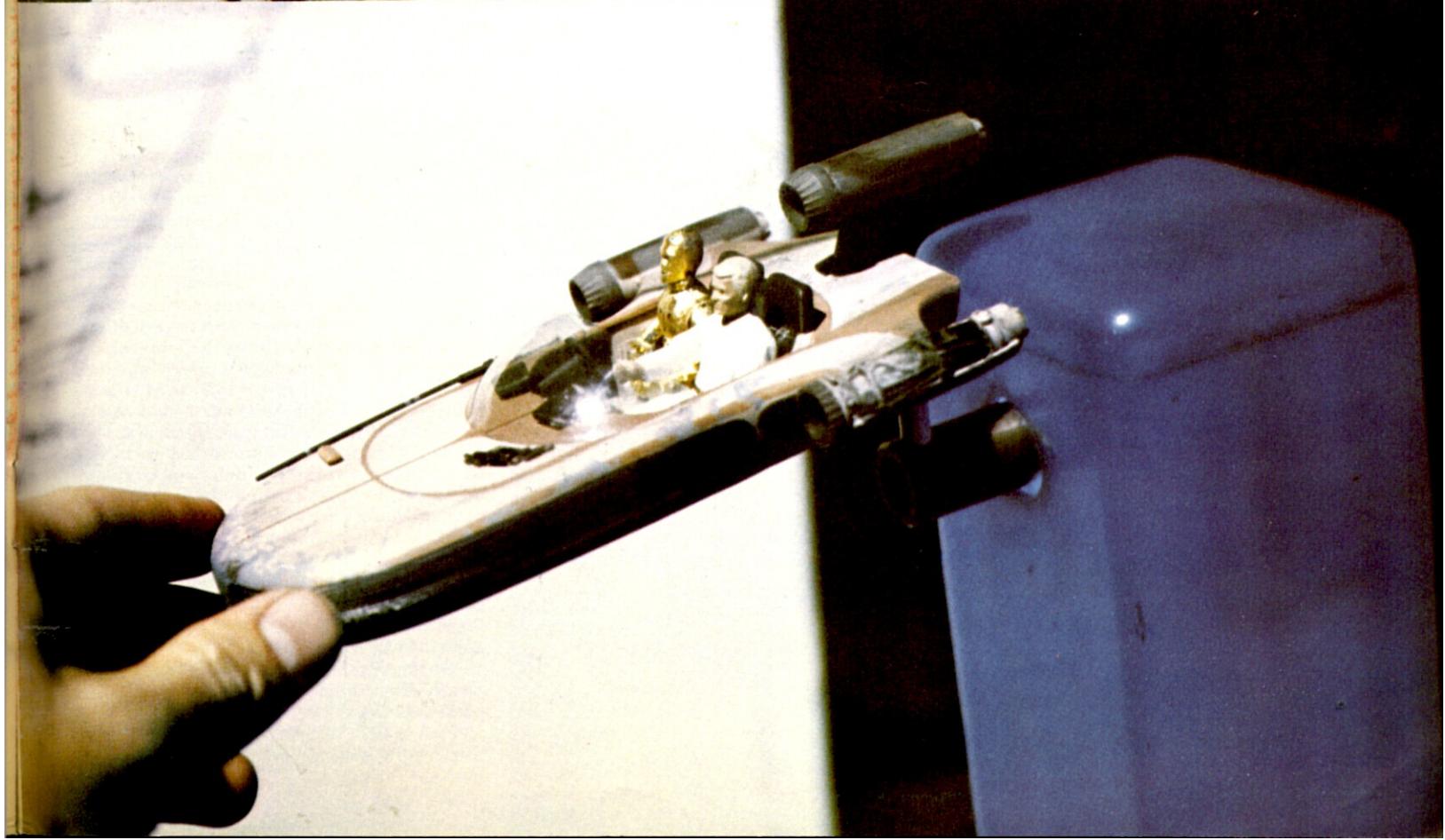
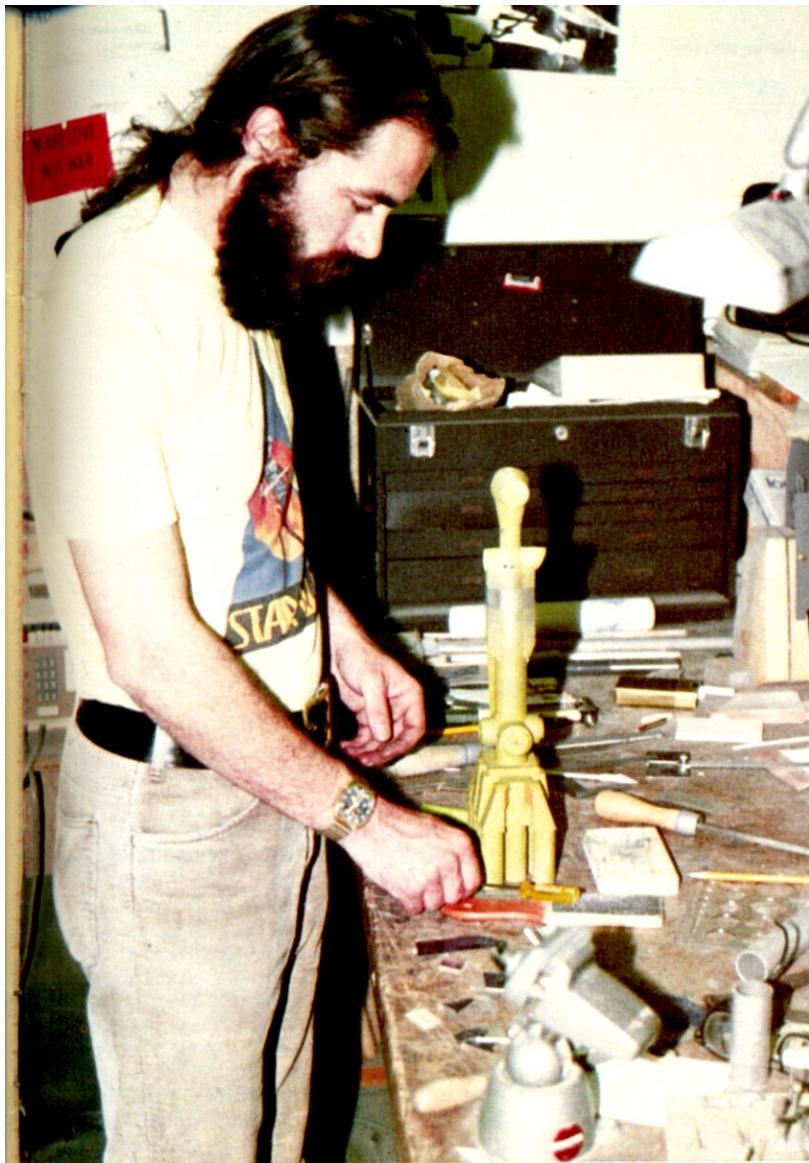
Santa's Workshop at ILM

"I don't think anybody has ever put that much effort into miniatures, and then had them used so well photographically. The key to it was that everybody in the shop was working together. If Richard Edlund would say 'Hey, we've got to get in close on this side of the ship,' the whole crew would immediately dress up one side."

—Grant McCune

Santa's Workshop at ILM is the model shop, supervised by Grant McCune, interviewed on the preceding page, in charge of the construction of all the model spacecraft and miniatures used in *STAR WARS*. *Right Top Left:* Model builder David Beasley working on a small version of the Rebel Blockade Runner used in the film's opening shot. The model was machined out of solid aluminum by Beasley and Jon Erlund, with final detailing and graphics by Dave Jones. *Right Top Right:* Paul Huston (left) and Lorne Peterson at ILM, working on the construction of an X-wing fighter. Note the supply of model kits for miscellaneous detailing in the background. *Right Bottom:* A miniature land speeder used for only one shot—the shot of the Tusken Raiders on the cliff watching the speeder zip through a canyon below. This shows the amount of detail put into the models. *Top Left:* Model maker Dave Jones attaches Darth Vader's ship to a pylon for blue screen photography. Jones specialized in adding detail to models and miniatures, and also assisted the stage cameramen in their set-up and photography. He is interviewed on the following page. *Middle Left:* The Death Star Surface on a raised platform to fit with a trench section being filmed. The model shop constructed the large scale miniature out of various interlocking two-foot square sections cast in foam. *Explosion by Joe Viskocil, © 1977 20th Century-Fox Corporation* *Bottom Left:* Model maker Steve Gawley works on the construction of Darth Vader's custom TIE ship. All of the model ships were constructed 1/16 scale for realism, except the huge Star Destroyer, which was 1/400 scale.





DAVE JONES

Model Maker

"I had to redo the Rebel Blockade Runner, the ship that gets chased in the opening shot. That originally was going to be Han Solo's ship. The rumor I heard was that it looked too much like SPACE:1999, and so they scratched it! We ended up making it on a larger scale."

Dave Jones is a model maker with a talent for adding fine detail to a miniature, one of the many individuals who occupied Santa's Workshop at Industrial Light and Magic. He was born in 1947 and attended California State College at Long Beach, graduating with a Bachelor of Arts Degree in Industrial Design. "That's really how I got involved in STAR WARS. John Dykstra, Bob Shepherd, Joe Johnston, Jamie Shourt, and quite a few others had gone through at least part of the Industrial Design program, even though most of them didn't graduate from there." It was good training for artists like Dave. "Part of the thing that you have to go through as far as design education goes is to be able to make your own prototypes. I was able to do models fairly well and I needed a part-time job to finance my way through school. As it turned out, I was one of the only people working at ILM on a part-time basis."

After completing his work on STAR WARS, Dave went to work at Future General and helped create the Mothership in CLOSE ENCOUNTERS OF THE THIRD KIND with such noted modelmakers as Greg Jein. He has just finished special effects work at Filmation for SPACE ACADEMY, a Saturday morning science fiction television show for children.

How did you get your job at ILM?

I contacted Bob Shepherd, who at the time was the production coordinator, and I started working there in December 1975. When I graduated, I started working there full-time. I guess I was on STAR WARS for about thirteen months.

What was your working situation like?

Actually working on STAR WARS was kind of a gravy job. It was great. What was so neat about it was that Lucas had the sense to turn the people kind of loose. In a sense STAR WARS might've been expensive, but for the actual cost of the models and miniatures and the special effects, I don't think it was anymore expensive than a lot of other movies. The neatest thing

about the whole place was that everybody was really involved. Everybody knew as much about the *whole* movie as they could. That knowledge wasn't stifled. Since then, I've found that on a lot of movie sets, they don't really want you to know any more than you have to. On STAR WARS, we had the opportunity to see all of our dailies every day. It was a pretty close-knit thing, and they really didn't mind if we took the fifteen minutes to go watch dailies. They knew we would put in the time later, because we were that enthusiastic about our work.

What was your main function in the model shop?

As far as the models went, everybody did a little of everything. I guess there were ten or twelve of us working in there. Grant McCune coordinated everything. He was really neat in the sense that he knew what all of us could do. He'd just tell us what was needed. We'd get to work and if we'd have questions, we'd ask him. He wasn't the kind of guy that felt he had to stand over you and make you do it. He was really good in that respect. As for me, I did a lot of detailing. I'm kind of into that because it really "makes" the scale of a miniature. It's the small stuff that you might not outright realize is on the ship, but subconsciously you are seeing that there is this detail there. I think it really does make it more believable. I spent a good portion of the time working on the Corellian Cruiser. We called it the Star Destroyer when we worked on it. It was the delta-shaped cruiser that the Empire had. The model was about three feet long. Dave Beasley and I spent about a month just doing the fine detailing on the *bottom* of the thing so that the camera could pass underneath it for the opening shot and the lettering could be picked up as large as it was. We were really happy about that. When we saw it at the preview, everyone was clapping. It's interesting, at one point we were going to *build* the bottom of that ship. It would've been about *forty feet long*, and the camera would pass under it to get the effect of this really large object. But when they ran the tests on the miniature that Dave and I detailed, it turned out fine.

Weren't you involved in the actual filming of the starships?

Yes, I was. In addition to detailing the models, I worked as an assistant with Ken Ralston under Dennis Muren on the operation of the Dykstraflex camera. Dennis would be the one who was actually putting the physical information in, but he would have to program it in through either Ken or myself. It was kind of complex to feed that information into the memory. While we were programming, so that the Dykstraflex had a quick access to the memory system, the information could also be programmed into a "random access memory," like the chip in a calculator. If we wanted to "save" the program, we'd play it onto a tape cassette. Some of the time we'd have to match moves—the two elements might not be shot on the same day or even the same month! So we'd have the program for the shot in storage on tape. By taping the program, the electronic impulse of the program would be converted into a magnetic impulse for storage. On the playback, the magnetic impulse would be reconverted back to an electronic impulse. That reconversion would energize the motors and the move

would be repeated exactly as before. It may sound complicated, but once you've sat down and figured it all out, it makes sense.

We used a similar system on CLOSE ENCOUNTERS OF THE THIRD KIND. It was built by some of the people who worked on the Dykstraflex for STAR WARS. In fact, it was actually an older system. We had to use motion control equipment. I guess that is the way to go if you're going to do a lot of complex multipass moves. In some instances, there would be *thirty minute exposures* on some shots. There would be so many passes it would take about thirty minutes per frame by the time you added them up!

What other models did you work on?

In *American Cinematographer* [pp 702] there's a shot of someone's hand holding a small cannon. That's my hand. I made the cannon and a lot of other stuff that didn't show up in the film very well. Originally, they were going to have it move. They put fiber optics in it which would act as a point light source when the laser beams were rotated in. It was all plexiglass and aluminum and styrene.

I worked on the detail on Darth Vader's ship and, in fact, on all the ships, and helped put together some of the molds. I worked on a lot of the X-wings and did all of the detailing on the Y-wings. We all kind of pitched in where somebody was needed.

Do you remember the first job you did at ILM?

I actually started out working on the Death Star. We did that in a few different scales. The round globe was a clear plexiglass sphere about three and a half feet across. I believe Ralph McQuarrie did the initial painting on half of the sphere to make it look like a metal globe with different textures and trenches on it. Then they wanted it to appear as though there was light on the surface of the globe, small sources of light, so Ralph would scratch through the paint and put a battery of lights in back of it. I put so many holes in that thing! I also had to extend the paint job around the sides so the Death Star could rotate further during a given shot.

Do you know the big dish that focused the Death Star's energy rays? Originally that dish was going to be situated right on the *equator*. There's one shot in *American Cinematographer* [pp 742] that shows a picture of it and the lights that were going to be projected on it. Anyway, the Death Star globe had to be changed because we couldn't build it that way. So that dish was eventually moved up above the equator.

We were going to take a large 4x5 or an 8x10 negative and project it onto a large painting that Ralph McQuarrie had originally done of the Death Star. But it was flat. They decided that they wanted the thing to be able to rotate, which would give it more depth. That's when they decided to have us build the model.

In *American Cinematographer* it shows a backlit shot [pp 742] of the Death Star. The caption read "the backlit portion was filmed on a separate pass to balance its brightness against the front light exposure without changing aperture..."

Guess what? It wasn't true. We shot the Death Star single pass. We did separate passes on the rocket engines of the X-wings and all those, but on something as tiny as those light sources on the Death Star—no

way!

Did you work on any of the explosion setups?

I worked on some. A lot of that was done out in the ILM parking lot. The sun was used as the key light. They had a heck of a time positioning the sun. It just didn't want to hold still!

Wasn't there a problem in matching explosions filmed in sunlight with those that were filmed inside?

That's one of the nicest advantages of using blue screen. The different elements can be color-corrected, whereas if you do everything "held take" or if you have to do everything on the original negative, it has to be the proper color to begin with. There's no way to correct for the differences in lighting.

Were you on the shoot for those outdoor explosions?

I worked with Dennis Muren at night. We were basically the night crew. So most of that stuff was done when we weren't there. There were a number of different times and ways they tried doing explosions. We did explosions every way you could possibly imagine! Initially, we'd hang the models in front of the blue screen so that the model was stationary, and it would have charges in it. They would push Richard Edlund on a high speed camera towards the explosion. The stuff was exploding so fast that even at 200 frames per second, we had a hell of a time slowing it down! Most of that footage didn't get used. Then we tried running some ships down a guide wire and exploding them as they passed in front of the camera. Some of those got in the movie. By then, we developed enough technology about foam models, getting them at the right consistency, so that they wouldn't have to have so much of a charge in them to blow up right. There were a couple of X and Y-wings blowing up. When they were moving on the guide wires, all the pieces kept going in the same direction. I think it looks much more realistic that way.

How did the ships go down the wires and explode on cue? How were they triggered off?

I believe the way we worked it, the guide wire acted as the ground. Another wire near it was the source of electricity. Just at the right moment, somebody would push a button and Richard would do a whip-pan on it as it went by.

Bruce Logan came in and did some photography on the explosion shots for STAR WARS, too. I think he was credited as a second unit cameraman. Bruce worked on 2001. I believe Future General will be doing the effects for BUCK ROGERS, and Bruce will be the director of photography on the live action.

Did you have any contact with George Lucas?

I didn't have to work with him closely, of course, but there were times where we would discuss certain things. I had to redo the Rebel Blockade Runner, the ship that gets chased in the opening shot. That originally was going to be Hans Solo's ship. The rumor I heard was that it looked too much like SPACE: 1999, and so they scratched it! We ended up making the Blockade Runner on a larger scale by putting smaller detail on it. I redid the entire front end of it, putting a smaller cockpit on it, that sort of thing. It actually had a lit cockpit inside of

it but you never see it in the movie. It had Playboy pinups in it and the whole bit to scale! So while I was working on that, George would come by and take a look at it and we'd talk about the feelings he had on it. He was kind of an easy-going guy.

One night when Dennis and Ken and George and I were standing there and talking about a shot we were going to do—we had the storyboards in our hands—some young guy came walking in. I approached him and asked him if I could help him because at that time, there was even a little secrecy on that set. It turned out to be Steven Spielberg! I guess he and George are fairly good friends. He just introduced him as "Steve," and it was only later that I found out who he was.

Did you work on the Mothership for CLOSE ENCOUNTERS OF THE THIRD KIND?

Yes. There were quite a few of us working on the Mothership—Greg Jein, myself, Peter Anderson, Larry Albright, maybe six or seven people. Dennis Muren did all of the filming of the Mothership.

If you could single out one incident that really inspired you to do the work you did in the model shop, what would it be?

One incident had to do with Ben Burtt, our sound effects man. I think Ben was one of the first persons STAR WARS actually hired. He'd come in occasionally and do some still photography for us, and then he started getting involved more in the sound effects for the show. I remember one time they went out to the air races and recorded different sounds from P-51s and all those. Ben brought in some sounds of different things he wanted to use for the Pirate Ship, playing it backwards, then playing it real slow. You could hear all the hydraulic doors closing and the aircraft taking off. Grant McCune had a really nice set of Yamaha speakers in the model shop at the time. When Ben put that sound on, it was just fantastic! We were all sitting there trying to create these little miniatures. None of them were done and they were all kind of amorphous shapes, but that sound really gave everybody a lot of go! And those amorphous shapes soon became the spaceships that added so much to the phenomenon known as STAR WARS. ■

JOE VISKOCIL

Miniature Explosions

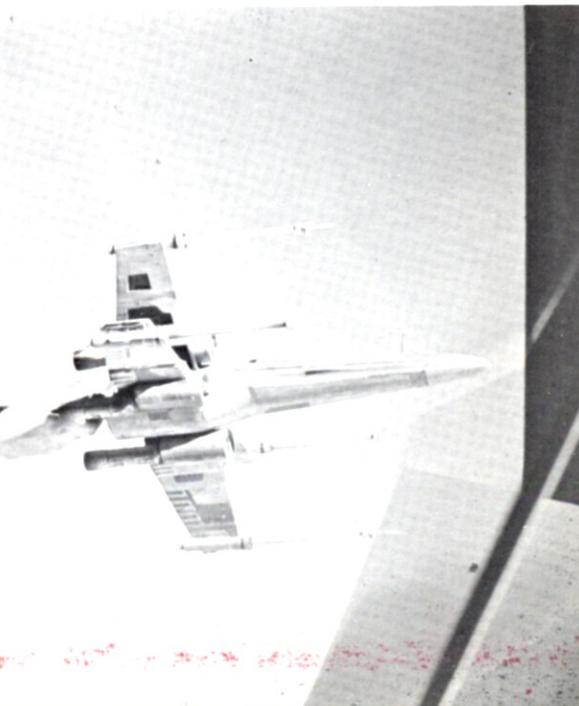
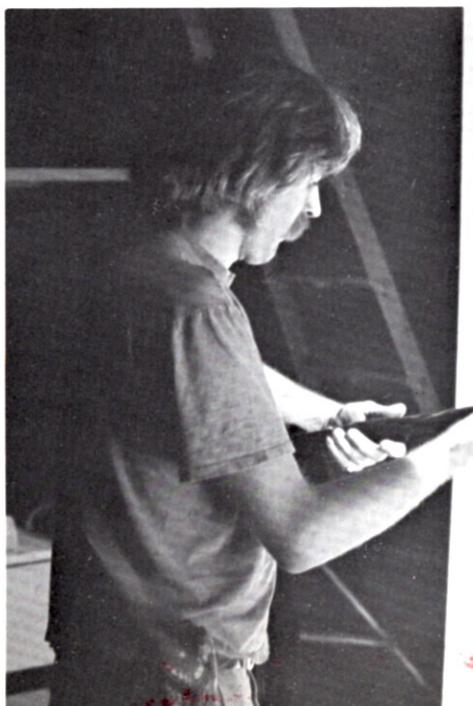
Joe Viskocil began working professionally in the special effects field on FLESH GORDON in 1971. "They were looking for someone who could do miniature explosions. I started experimenting then, and thanks to Tom Scherman got the job." Joe is a self-taught "powder man." There are no schools or apprentice programs in which to learn the trade. "It's something you have to learn on your own, and you have to know someone who already has a 'Pyro Card' who will let you experiment."

Joe also does miniatures, model-work and still photography, and has worked on several Sid & Marty Krofft Saturday-morning television shows such as LAND OF THE LOST, FAR-OUT SPACE NUTS and THE LOST SAUCER. He recently completed the explosions for GALACTICA at ILM, and worked on BUCK ROGERS, a TV-movie for Universal. Currently, he is doing the explosions for IN THE DAYS OF THE COMET, a TV-movie based on H.G. Wells about a comet which strikes the state of Arizona. He has been approached by producer Irwin Allen to work on THE SWARM. Joe is 27, and claims to have seen every science fiction film ever made! "I'd like to gear all of my work toward science

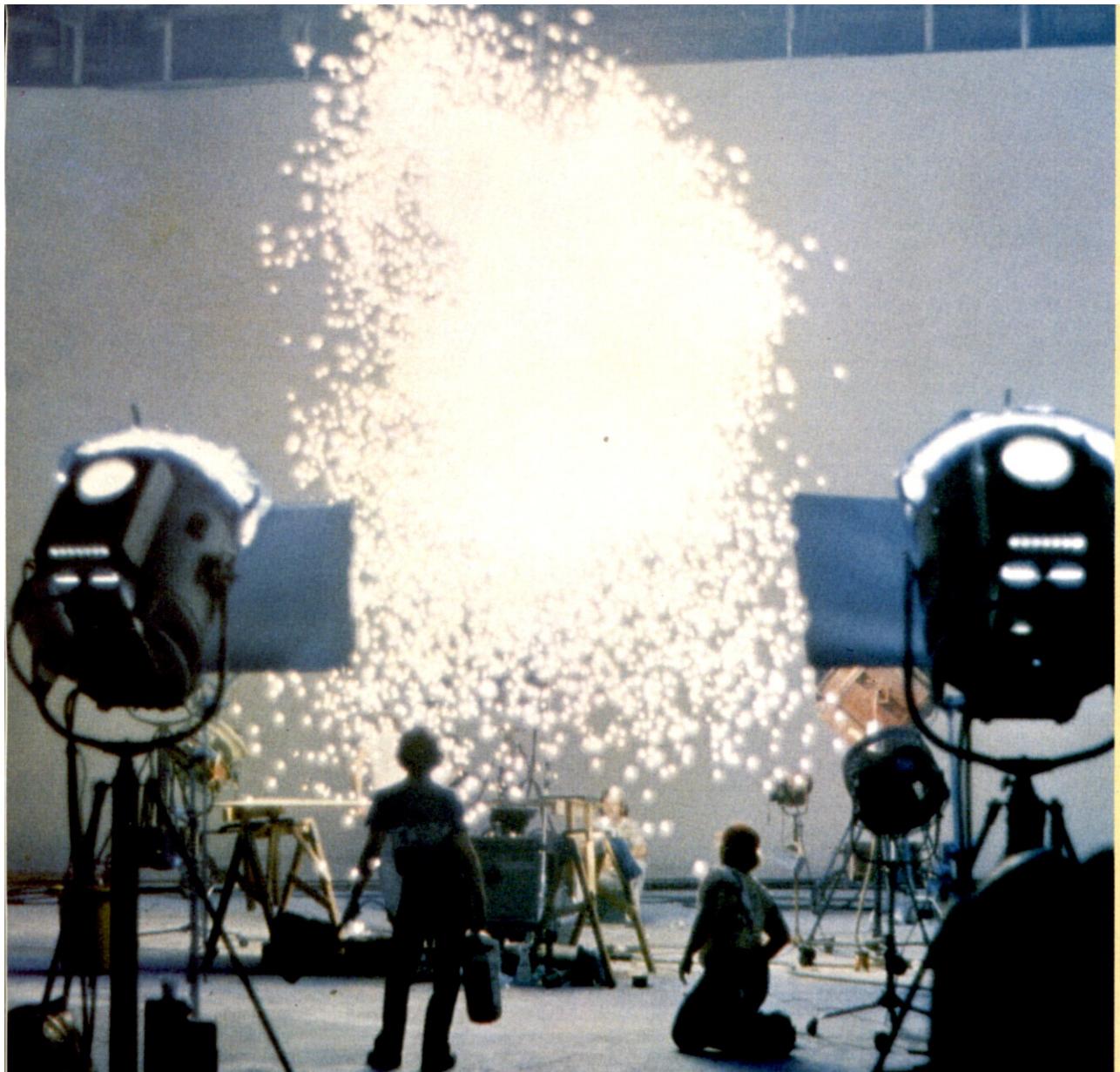
continued page 90, column 3

INTERVIEW BY MICK GARRIS

2nd unit miniature and optical effects cameraman Bruce Logan sets up an X-wing ship for explosion. Logan photographed most of the miniature explosions Joe Viskocil created for the film.



Explosive Action by Viskocil

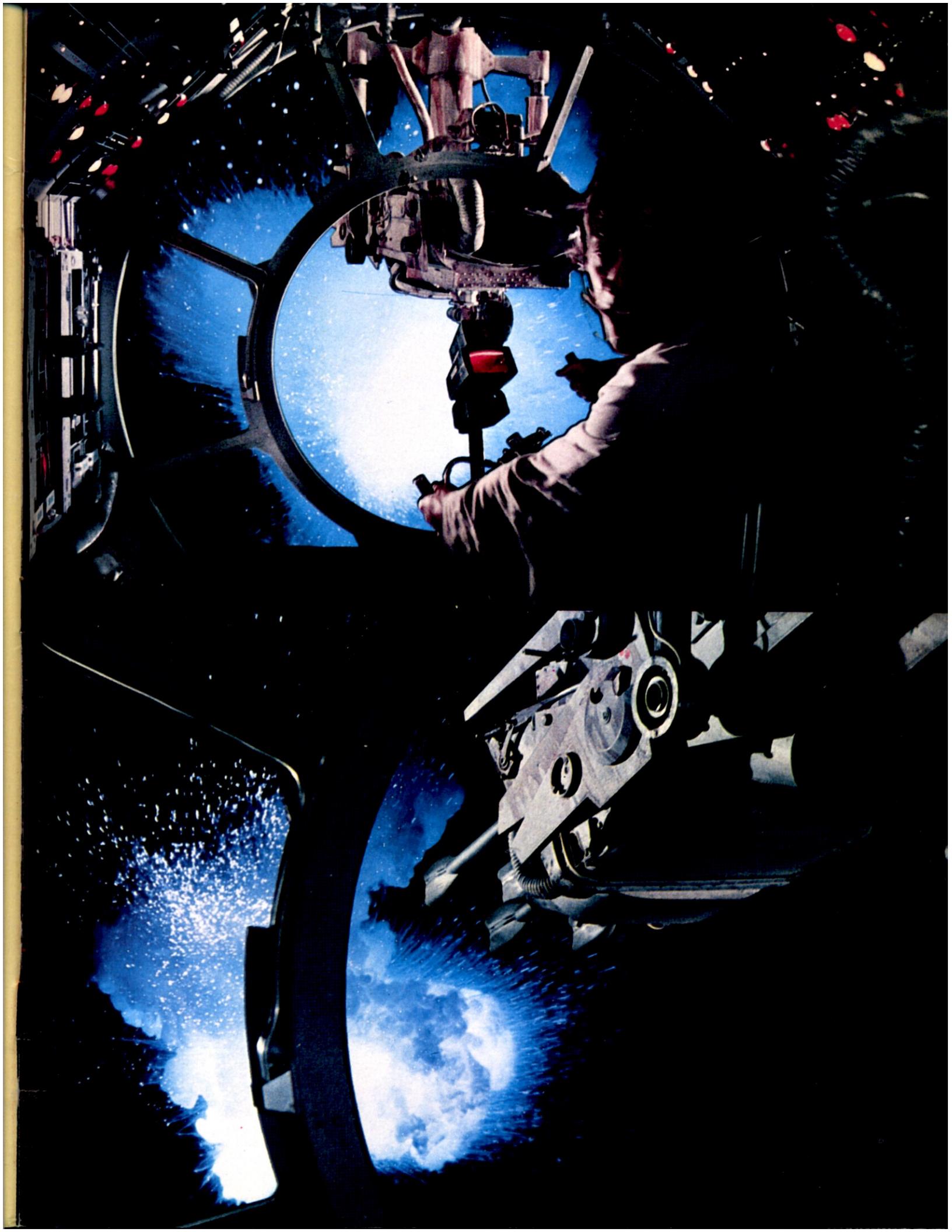


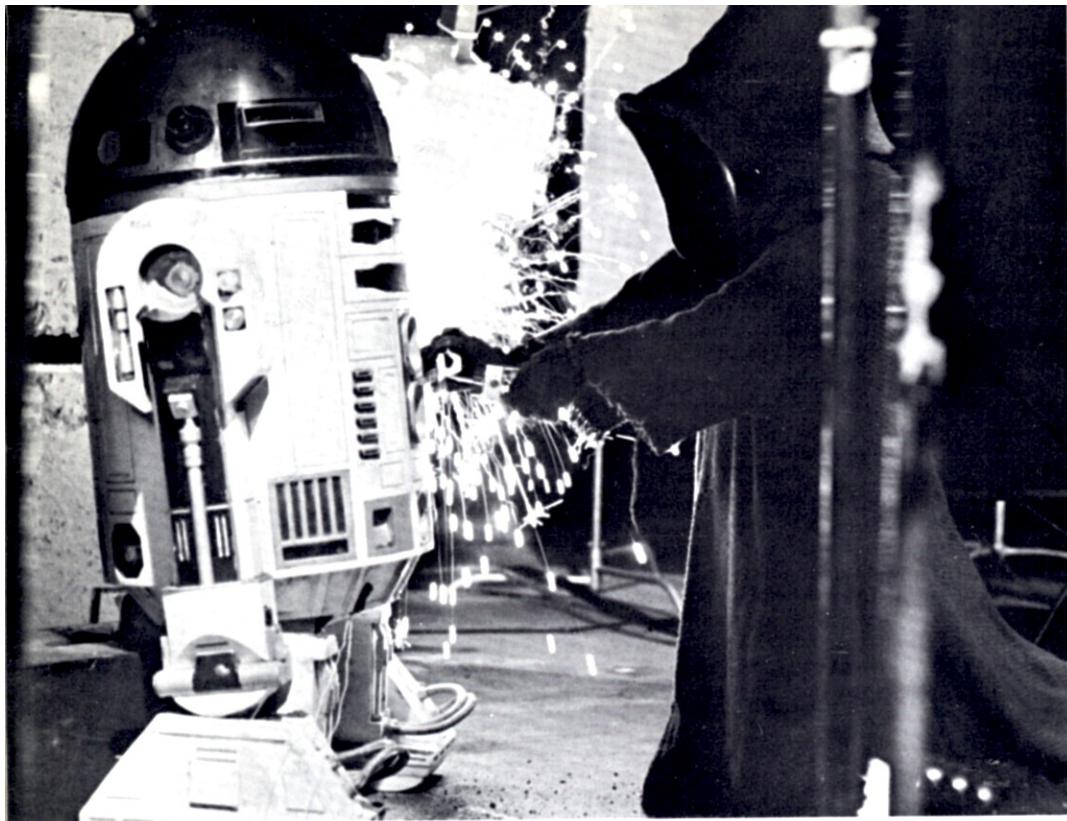
"ILM has quite a library of my explosions. I must have given them 200 explosions altogether, off and on, over the course of a month. We did not do most of the explosions at ILM, like most people believe. They were shot at Producer's Studio, on one of the larger sound stages with a 40-foot ceiling, so we had enough room to make the bigger explosions."

—Joe Viskocil



After much fruitless trial and error at ILM, Joe Viskocil was called in to create the miniature explosions seen in *STAR WARS*. Viskocil is interviewed on the preceding and following pages. *Right:* Two of Joe Viskocil's T.I.E. fighter explosions which greatly enhance battle sequences between the Millennium Falcon and Imperial Scout Ships from the Death Star. All of the T.I.E. fighter explosions were double-exposed over the actual miniatures. *Top Left:* The climactic explosion of the Death Star filmed at Producer's Studio in Hollywood. Like the T.I.E. fighter explosions, this was also superimposed over the Death Star miniature. For this explosion Viskocil used a "Special Titan Blend," which leaves a gas-type of aura or glow as it dies away. *Bottom Left:* Joe Viskocil (left) and Joe Johnston prepare an X-wing model for explosion. The models were scored and pre-broken so that debris created by the explosions would fly off at the desired angles.





Joe Viskocil's only live-action explosion for STAR WARS, actually the same type of explosion used for the destruction of the Death Star. This closeup insert of the Jawa attaching a restraining disc to R2-D2 was filmed at ILM. The scene appears just before R2 is sucked up into the Jawa's huge Sandcrawler. Kenny Baker was not involved for this shot.

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fiction. Right now the challenge is the nuclear explosion of the San Onofre Power Plant required for THE SWARM. I can't ask for anything bigger than that!"

How did you get to do the miniature explosions on STAR WARS?

Word got around that I did the miniature explosions for FLESH GORDON, and I was contacted by Gary Kurtz, thanks to Mike Minor. Kurtz got me into his office and we talked about my work. I told him what I could do, and what I'd like to do. He had a lot of faith in me and gave me the break I needed.

Oddly enough, the first time I ever heard of STAR WARS was at a screening of AMERICAN GRAFFITI at USC. Lucas just mentioned the name once, and that was the only time it was publicized. A friend of mine happened to be in the audience and told me about it. I said, "This guy's going to make one hell of a show. I'd seen AMERICAN GRAFFITI and THX-1138. I knew what STAR WARS was going to be like."

That was about four years ago, and Mike Minor and myself actually got up enough balls to go up to San Francisco to see Lucas. We took the stuff we had on FLESH GORDON to show him what we could do, and tried very hard to get on the picture. We showed him all this stuff, and he was very quiet, very courteous. He's the type of person that you have to keep the conversation going, because he'll stop it. And it's a very bad feeling to have to keep the conversation going, trying to say that you want a job, or that you're going to do good things for him. Afterwards, Mike continued to write Lucas and tell him that we were going to come up with a short presentation of a battle sequence. We had this whole sequence planned and storyboarded. We got one of the pods from SILENT RUNNING. We were going to put tractor treads underneath it, have it remote controlled, and have ships fly by and explode. We got busy doing other things and couldn't do it. It's really ironic that four years later I was called in to do the miniature explosions.

About eight months before STAR WARS came out, Mike talked with Lucas and Kurtz about setting up as a second-unit art director and doing a lot of large miniatures. This was in September of 1976, and Lucas wanted to set up this second unit to get the ball rolling because Dykstra was behind schedule. Mike was brought in to do these large miniature sets of the Death Star into which the X-wing and Y-wing ships would crash. He came up with one which was really exciting, and George was very impressed with it, but there was just no money left in the budget to do what Lucas wanted to. Mike only did that one set, and I did an explosion for it that I was really proud of, but it was not used in the film.

What had ILM done with the explosions at the point you were called in?

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ner. We have been together for fifteen years. At the same time we were due to appear on OPPORTUNITY KNOCKS [a British Talent TV show] and we were convinced stardom was just around the corner. We didn't want to commit ourselves to a film for six months when we could anticipate a lot of lucrative bookings. I turned the film down four times for that reason. Les Dilley, John Barry's assistant [Barry was Production Designer], persuaded me to do it. My partner played one of the Jaws who collected the robots for scrap metal. I only learned the story by reading the magazines afterwards. It was so involved and I had no lines. I was really well directed. The noises of course were dubbed in afterwards.

Do you think you invested your own mark on the personality of Artoo-Detoo?

I tried to. You're a bit limited with a robot though, aren't you? All I could do was move it and react with the head to whoever spoke. Lucas said it came through.

Can you explain as much about the model's workings as possible?

The head was on a swivel, like a ring on the top that was loose with holes in it so that the spikes on the helmet could slot in. The whole thing moved on graphite. It wasn't fixed though. If I moved it around quickly it would lift off. That's why I wasn't in the robot when it falls over in the desert. It was really cramped inside. My elbows were stuck to my sides and I had two grab handles in front of me and two switches, one for lights and one for the motors to power the lights. There was so much buzzing and whirring going on that when Lucas yelled "Cut!" I went on until someone hit me on the head with a hammer to stop me. The two arms operated from inside couldn't do much, but they looked effective. I had a seat inside and I was also strapped into a harness so I was made as comfortable as possible. The main problem was getting my feet into the feet of the robot as the shoulder to the foot was one long arm and I had to

put each leg down and then out and then down again. My shin used to catch on the metal edge so to alleviate this I had ski type zip boots made for me which made it slightly easier. I also wore knee pads. The way I saw was through a telescopic lens which distorted everything so I couldn't judge distances. That was a problem in itself. I tried to shuffle along at first with the legs on rollers but they had to put ratchets on it to stop it moving backwards. I had about 3-4 inches of movement in each heavy leg so the solution was to rock it, which is what I did, and it gave the robot a lot more animation. Changing distance meant rocking for about thirty times. All the long shots used the replica with the third leg. In Tunisia, because of the radio signals from the sand, the other model went haywire and kept crashing into me all the time.

Did you prefer location or studio work?

Both had advantages and disadvantages, really. In the desert it was freezing in the morning and we all wore anoraks, hats and goggles. It was like SCOTT OF THE ANT-ARCTIC. Then it changed to violent heat and then wind. All types of weather in one day! The robot reflected a lot of the heat though.

What about your working relationship with the other actors, especially Anthony Daniels, who played See Threepio?

Tony was alright. He's a Shakespearean actor and I'm not, but we got on fine. I didn't see much of Carrie Fisher. Harrison Ford I didn't say two words to. There were two definite camps, the English contingent and the American one. Alec Guinness was great. Don't get me wrong though, there was no friction at all.

Does it worry you that you're a very famous personality without many people knowing what you look like?

Not much I can do about it really. I like being associated with a successful film, who doesn't. I've been approached to do the sequel and I'd love to do the film as a series, but I have my partner to consider. ■

ILM did quite a bit with explosions using actual ships blowing up, T.I.E. fighters, X-wings, etc. They did them in such a way that you didn't see any particular type of fireball or debris. There were just a couple of sparks and then the damn things would literally blow up. Some of that stuff was on THE MAKING OF STAR WARS, if you saw it on ABC-TV. I went through all their past explosions, to get an idea of what had been done. They had even gone so far as to rotoscope some of the explosions Greg Auer did. They rotoscoped a halo around all the pieces that had blown up and it looked like a cartoon. They didn't use any of those, not a one.

A lot of their time was wasted on the miniature explosions before they brought me in. It didn't have the spectacular look it needed. It didn't look like the ships were really exploding. So they set up a second unit to get them done called "9-10 Productions," comprised of production manager David Lester, cameraman Bruce Logan and myself. Logan worked on 2001, and is currently shooting the new STAR TREK. Together we came up with a technique that gave the explosions the zero-gravity effect needed. I insisted upon shooting with the camera pointed straight up, having the explosions come toward you, instead of bringing the camera into an explosion, like ILM was doing. We constructed a pipe with a black backdrop. It was placed on the ceiling. The pipe was set up so that when the explosion goes off, it shot straight down into the camera, like a cannon.

What is the main problem in making miniature explosions look real?

The main problem is that you make an explosive too large or too small. You have to contend with smoke. That will really give it away, like when you photograph water in miniature, as in LOGAN'S RUN. You see water on that huge set, and it doesn't look scale. You can tell that it's just a model. There were scale problems with the explosions at the end of LOGAN'S RUN also.

The majority of the stuff I did for STAR WARS, I tried to stay away from smoke a great deal. You just don't see smoke in outer space. There was a lot of flame. George Lucas insisted upon having more of a fireball-type effect for the ships, but I wanted to stay away from fire very badly as well. Like smoke, I just do not see fire in space either. Lucas was going more for the spectacular aspect of it, and I suppose I can see his point on that.

What were the specific types of explosives used for the different effects?

I used a lot of different materials in the explosions, silk, magnesium, powders, chemicals, gasoline, things of that nature. I tried to keep the T.I.E. fighter explosions consistent, using a green flame with gold sparks.

How did you achieve that?

First of all, I never actually blew up a T.I.E. fighter. It was all optically over, so that all I had to do was come up with an explosion. I can't remember what the chemicals were exactly. The bombs were quite small. At most, I came up with a one-ounce bomb, and it still looked pretty spectacular.

We never shot any of these with lights on the explosions. The initial blast of the explosion would light itself up, and then it would deteriorate, just totally black out,

and have the rest of the sparks coming out. These were composited over the actual ships.

Bruce Logan had quite a job trying to set up the explosion and still pan the camera, so that it looked like the explosion was flying past the gunport. The camera had to be moving, so that when the explosion goes off, you'd be getting a left-to-right or a right-to-left movement, the effect of Hans Solo's ship flying past it. The very last explosion in the T.I.E. fighter sequence consisted of two separate explosions, but they went off at the same time. That gave it the effect of an explosion within an explosion. I was particularly proud of that one. In fact, it's the best in the film.

How did you do the X and Y-wing explosions?

All the X and Y-wings were actually blown up. At ILM we shot a series of these which we mounted on wires. We set them off with a very fine blue wire they came up with which matted with the blue screen. The ships were pre-broken. I would score them in a way that I would want them to cheat the explosion toward the camera. This was another procedure I insisted upon: the time to break these ships down. Still, it all has to be one piece, and have the gasoline and explosives within the shell of the ship. When it blows open it is slow enough for you to see occasional debris and wings falling apart.

We did most of the X and Y-wing explosions blue screen at Producers Studio. It was very complicated. We had a very long tube. On one side of that tube would be a fan. We'd have the ship mounted on the other end, and the fan would start blowing. I'd set the explosion off and the fan would make it look like everything was streaming past the camera which was placed underneath, shooting up. That made it look like the exploding ship was actually moving forward.

How did Grant McCune feel about his models being destroyed?

Grant actually enjoyed it. He helped me with scoring the ships. He was very helpful in that respect. He seemed to know what I wanted and what was required of a particular sequence.

Why were the T.I.E. fighter and Death Star explosions just double-exposed? Isn't it preferable to blow up actual models?

It just seemed to work better with double-exposures in the case of the T.I.E. fighters, compared to the X and Y-wings. I think the T.I.E. fighters came out perfectly by double-exposing them.

Richard Edlund wanted to blow-up the Death Star out in the ILM parking lot, and we discussed that. He wanted to use a crane, with the Death Star overhead, but it got down to time, and it got down to money, and we just couldn't do it.

What camera speeds were used to film the explosions?

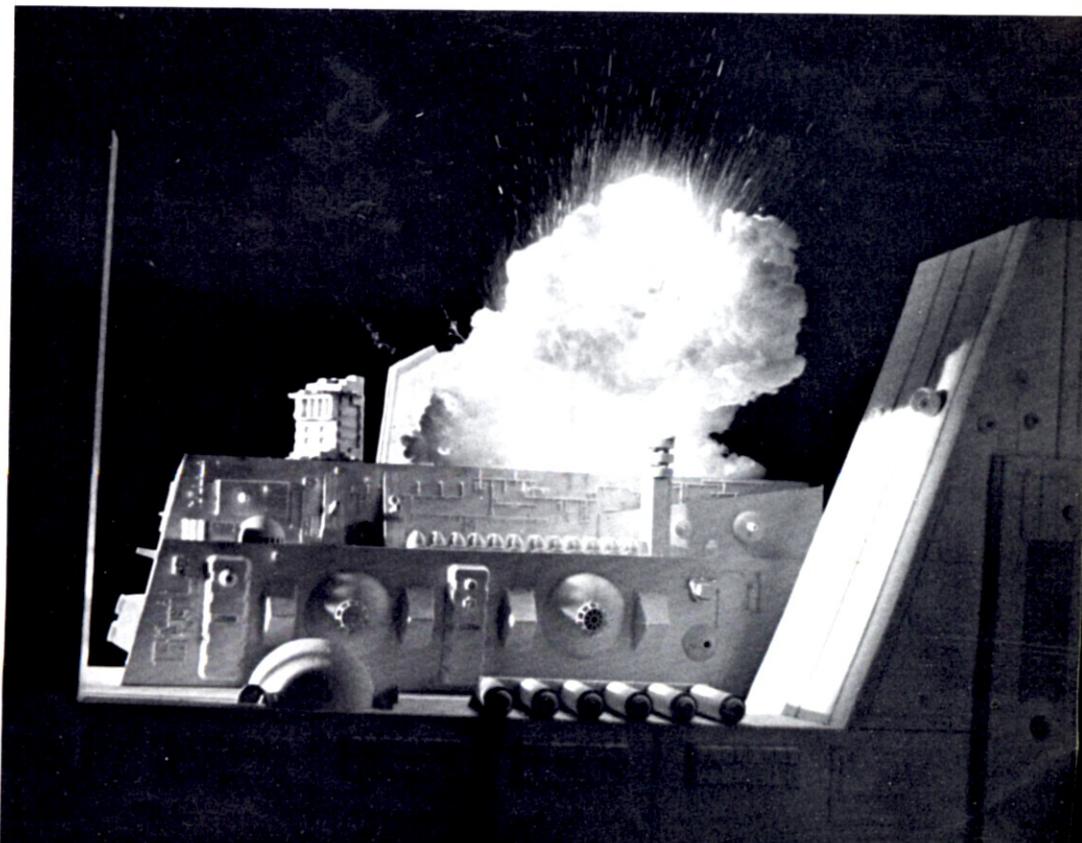
All the explosions were filmed at 100 to 150 frames per second, except for the Death Star at the end which was photographed at 300 frames per second. Normal speed is 24 frames per second. We usually shot at 125. It wasn't too fast, and wasn't too slow.

What did you use for the other explosions?

The Alderaan explosion consisted of gas and sawdust, which gave it the effect of debris and pieces of the planet itself coming toward you. We did a lot of those.

We had some very small explosions on the Death Star surface that we did out on the ILM parking lot. That was very difficult to do, and had to be the right scale. It couldn't be large. It had to be very small, just a few inches in size to keep in scale.

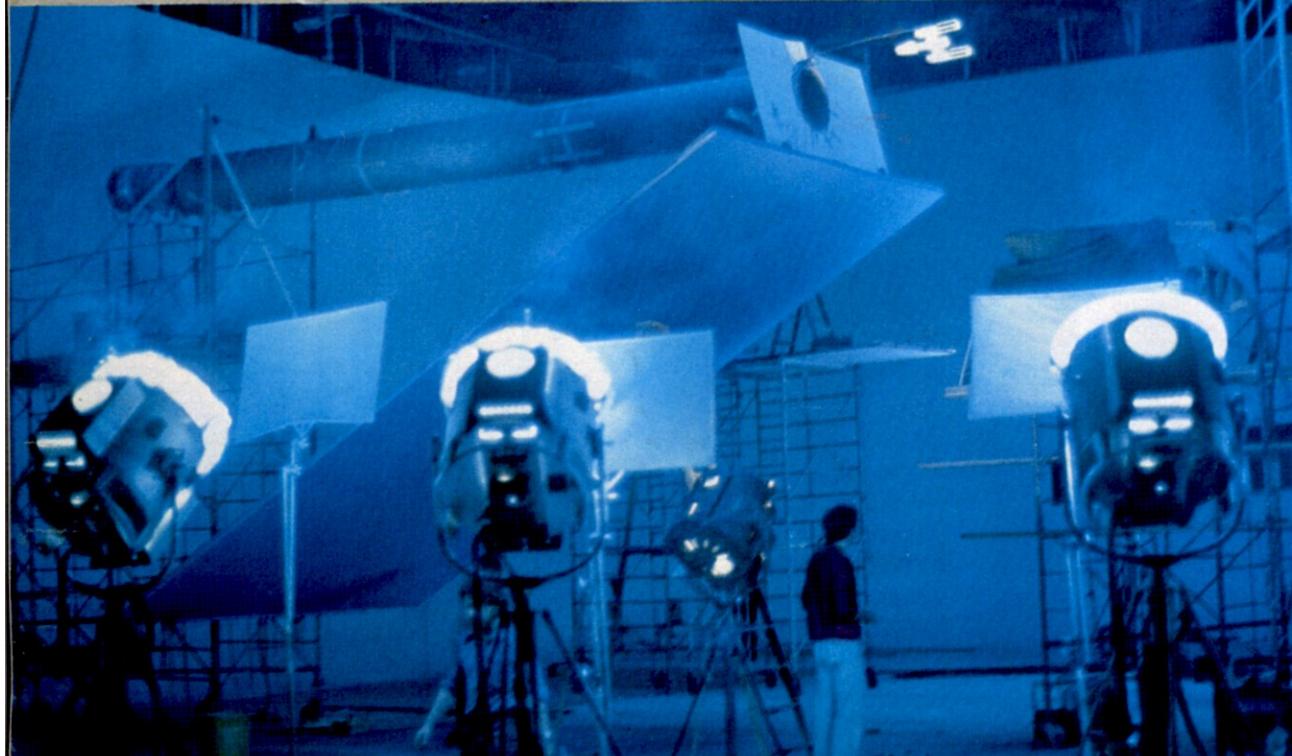
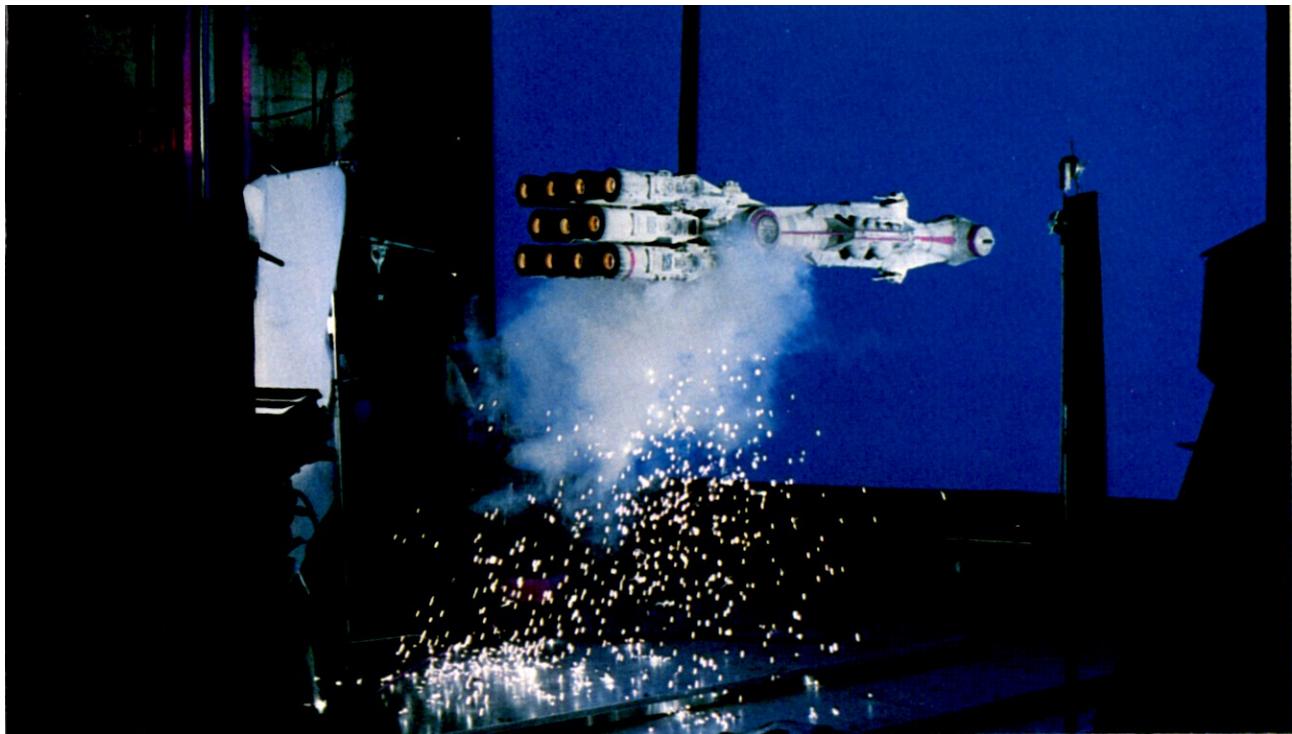
A miniature Death Star set created by Mike Minor, not used in STAR WARS. The explosion, representing an X-wing crash, is by Joe Viskocil. Minor worked briefly on the film as a second unit art director in the latter months of 1976, until production funds ran low and plans for his sequences had to be curtailed.



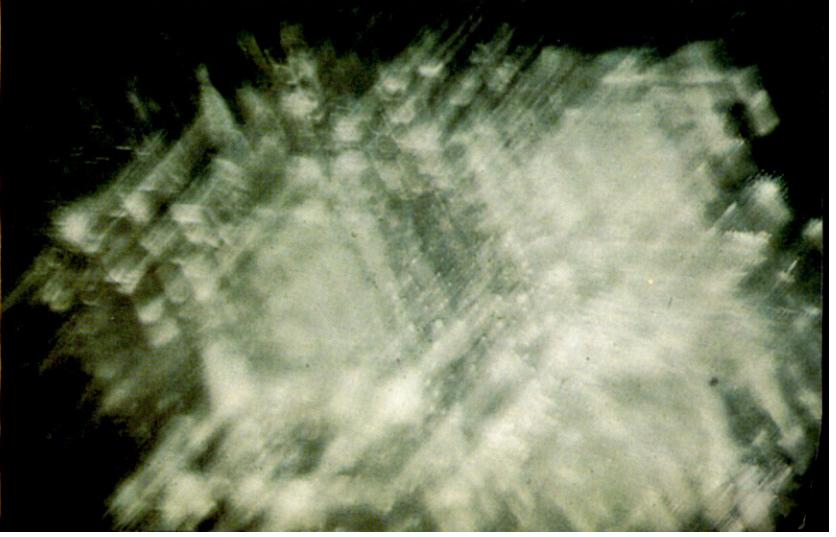
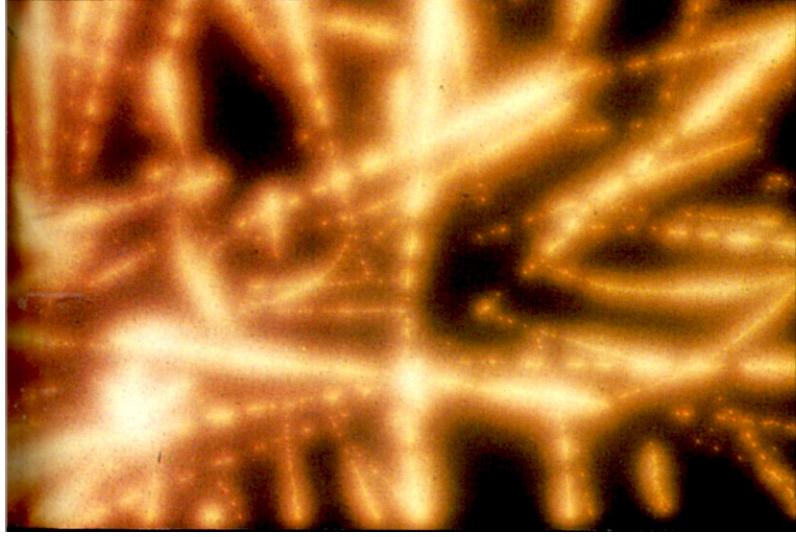
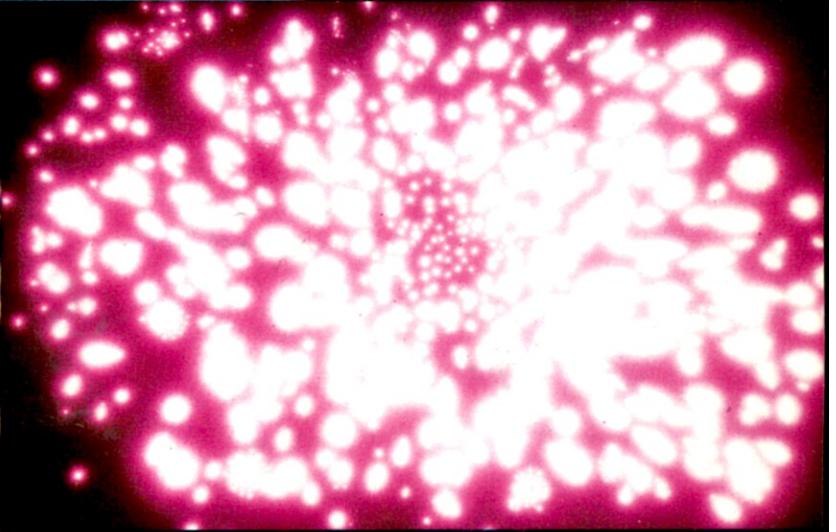
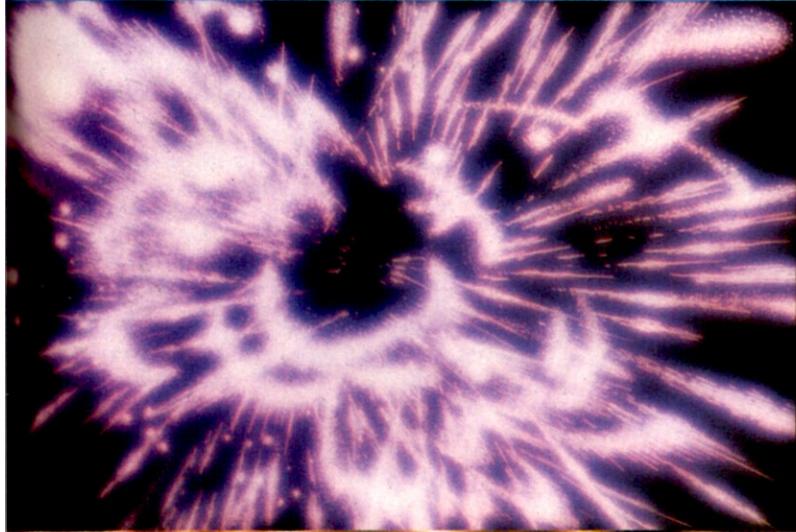
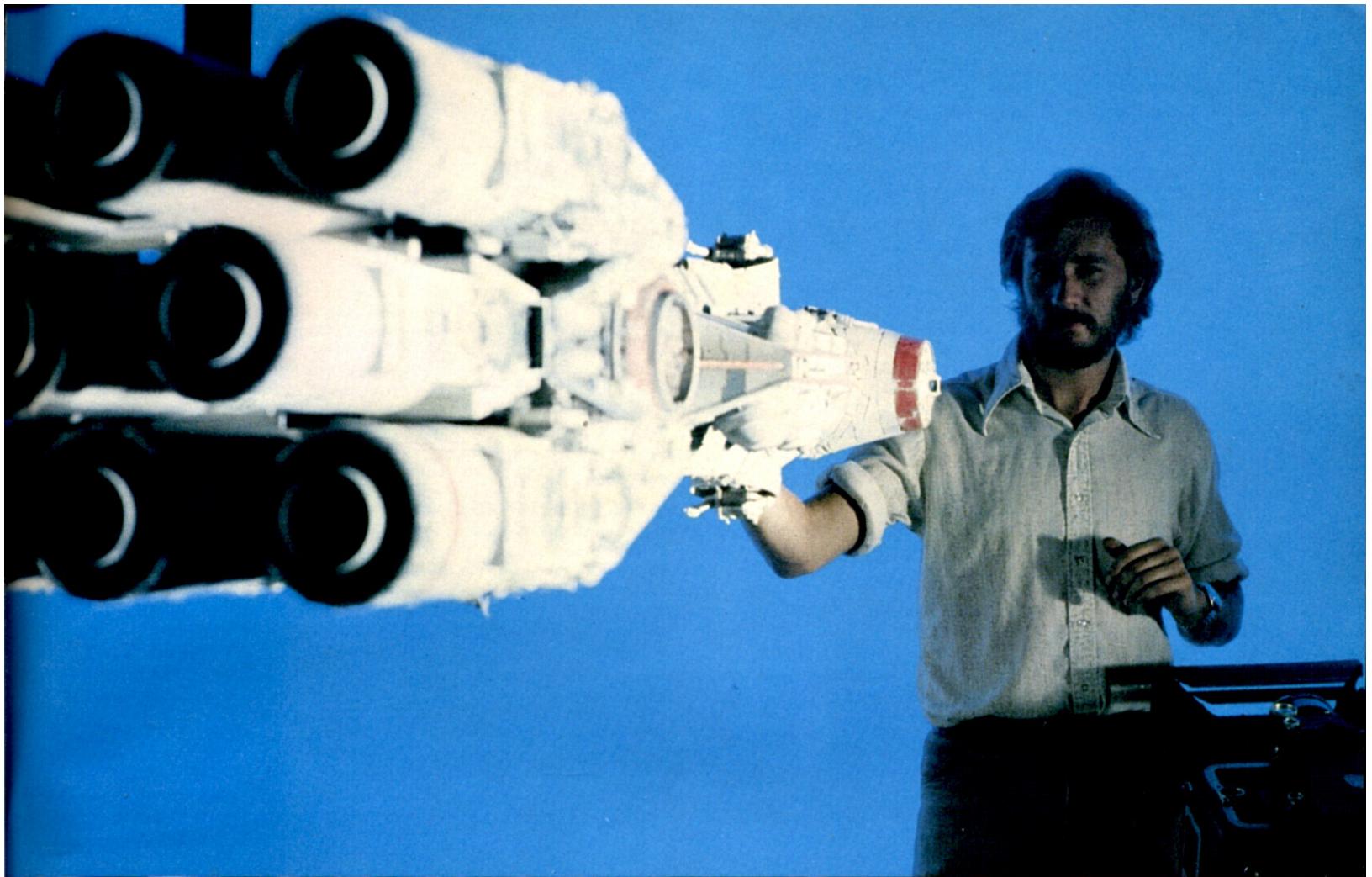
Filming Miniature Explosions

"Richard Edlund wanted to blow-up the Death Star out in the ILM parking lot, and we discussed that. He wanted to use a crane, with the Death Star overhead, but it got down to time, and it got down to money, and we just couldn't do it."

—Joe Viskocil



Top Right: Joe Viskocil arms the model of the Rebel Blockade Runner with an explosive for blue screen photography. The model is mounted upside down to give the explosion the proper zero-gravity effect. *Bottom Right:* Four examples of Adam Beckett's animated explosions, done to enhance early inadequate explosions filmed at ILM. None of these early explosions were used in the final film. Beckett is interviewed on page 19. *Top Left:* Filming the blue screen explosion of the Rebel Blockade Runner. Joe Viskocil judged this explosion as unsatisfactory because of excess smoke, but there was no time to re-film it. It appears as a quick cut in the final film. *Middle Left:* Cameraman Richard Edlund (behind camera on truck) gets his eyebrows singed by one of Joe Viskocil's Trench explosions in the ILM parking lot. Chief model maker Grant McCune and John Dykstra observe at far right. *Bottom Left:* Joe Viskocil's set-up at Producer's Studio for X-and-Y wing explosions. A high-speed camera films from below. The long tube is connected to a fan unit which blows the explosion sparks and debris to give the illusion of ship movement. A Y-wing is in position at top for filming.



For the Death Star explosion I used what's called a "Special Titan Blend." It is a gas explosion, so that after the particles come toward you, there's still a gas-type of aura in the air behind it, and you can faintly see this in the show itself.

Is it dangerous?

Yes, it is very dangerous.

On *STAR WARS* I never had any bombs go off prematurely. Nobody was hurt or scratched on the show. I got a small burn on my hand once, but that was it. I don't consider the work dangerous unless you're dealing with a fire nuisance. You do have to know what you're doing, and you have to get a license from the state.

How were the explosions detonated?

They were all electronically detonated using squibs. A number of types of squibs are used nowadays in special effects. We didn't have a match and a fuse.

*Out of all the explosions you did for *STAR WARS*, there must be a handful that you were really proud of that weren't in the movie?*

Yes, they have quite a library of my explosions. I must have given them two hundred explosions altogether, off an on, over the course of a month. We did not do most of them at ILM, like people believe. They were shot at Producer's Studio, on one of the larger sound stages with a 40-foot ceiling, so that we had enough room to make the bigger explosions.

If they call me onto the next show, I have tricks up my sleeve that I can apply to it. I've got a lot of ideas that I've considered doing now that I've seen the film many times. I realize that there are many other effects that I could give them. Just like in the trailer, at the end, where the words *STAR WARS* blow up. You see all these tiny particles on fire. That's one of the explosions I'm really proud of, very unique!

Which of your explosions didn't work for you?

There was only one shot that didn't work for me. I just saw too much smoke. It was the shot of the Rebel Blockade Runner at the very beginning. I wanted to redo that shot very badly. I pleaded with Edlund and whoever else was around at the time to redo it, but they didn't have the time. That was the only explosion I wasn't happy with. All of the others turned out just fantastic!

*Did you do any full-scale explosions in *STAR WARS*?*

I did one shot where the Jawa attaches a small device to R2D2 and there's a small explosion. That's the only live action one that I've ever done, and I think it turned out well. By the way, that little explosion is the same type of explosion used in the final shot of the Death Star, so you can see the difference in it being photographed live and applied to miniatures. All the other live-action explosions were done in England by John Stears and his crew.

Did you work closely with Lucas?

No. I saw him a handful of times at most. He would be talking with Logan more than he would with me, because of the camera setups. Lucas is a very mild-mannered person, very soft-spoken. He talked briefly with me as to what he'd like to see, and more or less gave me full reign to do what I really wanted. George has really given me the creative freedom to show what I can do and I think I came through.

GARY KURTZ

Producer

"I'm not making a sequel unless the script is good, and I'm approaching it from the premise that it's got to be as good or even better than the original. Five writers are working on it now, and it involves a snow planet contrasted with jungles. Lucas won't direct."

Gary Kurtz met Francis Ford Coppola during filming of *THE TERROR* for Roger Corman in 1963. While visiting Coppola's studios in San Francisco in 1969 during the filming of *THX 1138* he met George Lucas. In 1973, Kurtz and Coppola co-produced *AMERICAN GRAFFITI* for Lucas, and its phenomenal boxoffice and critical success provided the base upon which *STAR WARS* was built.

Kurtz was born in 1940 in Los Angeles, growing up there and in San Francisco. As a child he made his own 8mm movies and acted in school productions. He studied film at the University of Southern California, and worked in industrial and educational films after graduation. His entree into feature film work was for Roger Corman in various capacities on several low-budget exploitation films. Kurtz worked as lab technician, electrician, cameraman, editor, sound mixer, and still photographer, gaining experience in almost every phase of feature film production. He became an assistant director and production coordinator on two Monte Hellman westerns, *THE SHOOTING* and *RIDE IN THE WHIRLWIND*. After two years in the Marines as a cameraman, editor and still photographer he returned to USC for additional courses and edited several low-budget features. In 1970 he became associate producer on Monte Hellman's *TWO LANE BLACKTOP*, and *CHANDLER*, a detective movie with Warren Oates and Leslie Caron. Kurtz lives in Sausalito with his wife Meredith and two daughters, and is currently preparing the production of *STAR WARS* II.

*Was the conception of *STAR WARS* really due to the fact that there was nothing playing at the movies that you particularly wanted to see?*

George just said "Wouldn't it be great if there was an adventure/Flash Gordon fantasy playing somewhere." Well, there wasn't, so we decided to make it ourselves. We discussed it all through the making of *AMERICAN GRAFFITI* and did the technical research into how we would be able to accomplish the effects we wanted.

**INTERVIEW BY
MIKE CHILDS & ALAN JONES**

*Would you call *STAR WARS* the first nostalgic science fiction film?*

Possibly. It is an homage to all the adventure action fantasies, not just in film but also the '30's pulp magazines, Burroughs, Verne, etc. Nostalgia means recreating an era that people remember living through, so in that sense, no, it isn't, apart from the fact it's the sort of movie that people remember acting out in their backyards.

Has the film been successful due to the fact that it is derivative of familiar genres, rather than being innovative?

In any fairy tale your characters are archetypes. In one sense the story is cut and dried as it was fixed within those parameters, but if it uses familiar elements it's because the films we took our inspirations from also took their inspirations from the same basic source in the first place.

*Do you prefer the comparison of *STAR WARS* to westerns rather than *2001*?*

2001 is more scientifically oriented. As I've just said, this is a fantasy fairy tale, the latter was far more serious. I really can't comment on that as science fiction writers have been working in both camps at the same level for many years.

In the George Lucas interview in Rolling Stone, he is quoted as saying that the film is only 25% of the success he wanted it to be. Would you agree?

We achieved far more than that. You must remember that article was a series of five done over a period of time during post-production and then all collated together. It was a time when we were at our most desperate, as you can imagine. We were working 18 hours a day trying to get the movie finished in time for its premiere. All the problems seemed magnified. That article published more negative statements than positive ones which makes it all seem like sour grapes now. An audience either likes the film or doesn't. Only the makers can put a percentage success rate on it as we are so close and can see all its flaws and problems, but once the picture is out, that's it. You can't keep explaining it forever. We compromised a lot on this film as it did have a relatively low budget considering its subject matter, but I would put the percentage success rate much higher.

From the budgetary point of view, what was the most difficult effect to achieve?

Not just one solitary effect, but the whole of the battle sequence at the end. It was just so time consuming.

As a producer is in fact the money man, do you think you added enough to the film from a creative point of view?

My background is on the technical side, cameraman, production manager, editor, and a host of other tasks, but I think on this film it was my job to see that George had everything he required so he could get on and do what he can do best, direct. This film was pre-planned to the nth degree and with these pre-set limits and logistics I had to leave him free of any problems. I did argue with Fox a lot, but I dealt with it. This isn't a picture that George particularly likes to make. In fact we both prefer smaller films with fewer crew members and he likes shooting in a semi-documentary style, but we knew all this before starting the picture and I know that he found it limiting, so I made it as trouble free for him as I could.

Did you ever panic about going over

budget?

We thought at one stage that we were spending more than we originally estimated mainly because science fiction films haven't really done that well. 2001 took years to make its money back and we planned on \$20 million to break even. We weren't even sure we'd do that but we went along with it as it was a film we wanted to make and we had to hope there was enough of an audience out there who shared our opinion.

Looking back, that particular worry must seem ludicrous?

We were resigned to the fact that the film would be badly received because of its light-hearted entertainment value as critics tend to be too serious and too analytical. Surprisingly, they accepted the film for what it was and enjoyed it on that level. The immediate public reaction took us aback. We were relying on good word of mouth but what happened was phenomenal. I guess we hit the right time of year. It may have been clearer to us if we'd had the time to preview the film but we worked on it solidly until a week before its opening. Also the 18-35 picturegoing market has been analyzed but not the 6-18 year old one, so that was another factor.

Variety, calling it a Hollywood film when it was made mostly in England, was very unfair. What are your comments on that?

I complained to Murf about that. First, it wasn't a Hollywood picture anyway, not just because of the parts filmed in England, but because in California it was members outside the industry. That was one of Fox's major concerns and the reason why Universal and United Artists passed on the project. They didn't believe we could find the people to do the opticals and miniatures. At least 75% of the people we used were new to the industry—it was about a hundred people in all. John Dykstra had only worked on commercials and *SILENT RUNNING*. What Murf meant was Hollywood as synonymous with the film industry.

It was also a case of distinguishing what job title they should be categorized under. In most movies none of these people get a credit anyway. Most credits run for 30 feet. Ours ran four minutes [360 feet]. To a certain extent, the *Variety* comment was an oversight, but the studio did cut some of the credits as they thought they were too long. I'm all in favor of giving credit where it's due, but I'm not sure just how much a screen credit helps the technical side of the industry. A resume is much more important from their point of view.

Was anything taken out of the film in the editing stages that you would have liked to have seen in the finished film?

We took out a lot of things for time reasons, but a lot we didn't even shoot. From the screenplay we took out a long scene on the Wookie's planet that involved about 20 of them. We did shoot the scenes of Luke's friend who leaves to join in the fight and is killed at the climax, but it slowed down the earlier part of the film and was excised

because pacing was needed and their early discussion became redundant. The book, by the way, was done in a week. The technical jargon was taken out of the screenplay and replaced by dramatics.

Was John Williams always the choice for the music?

Yes. We'd discussed it with him before we started shooting. He hates the disco version, but John wrote good themes and at least they survive the interpretation.

STAR WARS didn't open in England and other worldwide dates until late Fall or Christmas. What about the publicity overkill factor?

The reason we've waited so long is to secure the right cinemas in each territory, i.e. for the size of screen and Dolby facilities. There's always that problem. I go with the attitude, a film can't be that good if the reviews are ecstatic, or if the reviews are bad that it can't be that awful! The film has been picked up as a news event everywhere and I'm hoping it won't diminish interest in the picture. We're trying to keep interest running by previewing it to media people, deejays, interviewers, etc. That's the reason why we entered the film in competition at the San Sebastian film festival and at Deauville. This way the people who see it and like it will generate enthusiasm. I always think of *JAWS* which didn't do too well in some territories solely because the companies involved thought everyone must have heard about it and wanted to see it.

Can you talk about the sequel?

We won't make one if we don't get a screenplay we like. Five writers are working on it now and it involves a snow planet contrasted with jungles. We always intended *STAR WARS* to be a multiple film as the characters were interesting enough and could be developed. The first film was an introduction to the environment and the characters. Two hours was too short a time to develop the personal relationships. The cast will be exactly the same. Lucas won't direct. He's too busy at the moment working on 16mm experimental films. I'd like

"My background is on the technical side: cameraman, production manager, editor, and a host of other tasks. On this film it was my job to see that Lucas had everything he required so he could get on and do what he can do best: direct. I did argue with Fox a lot, but I dealt with it."

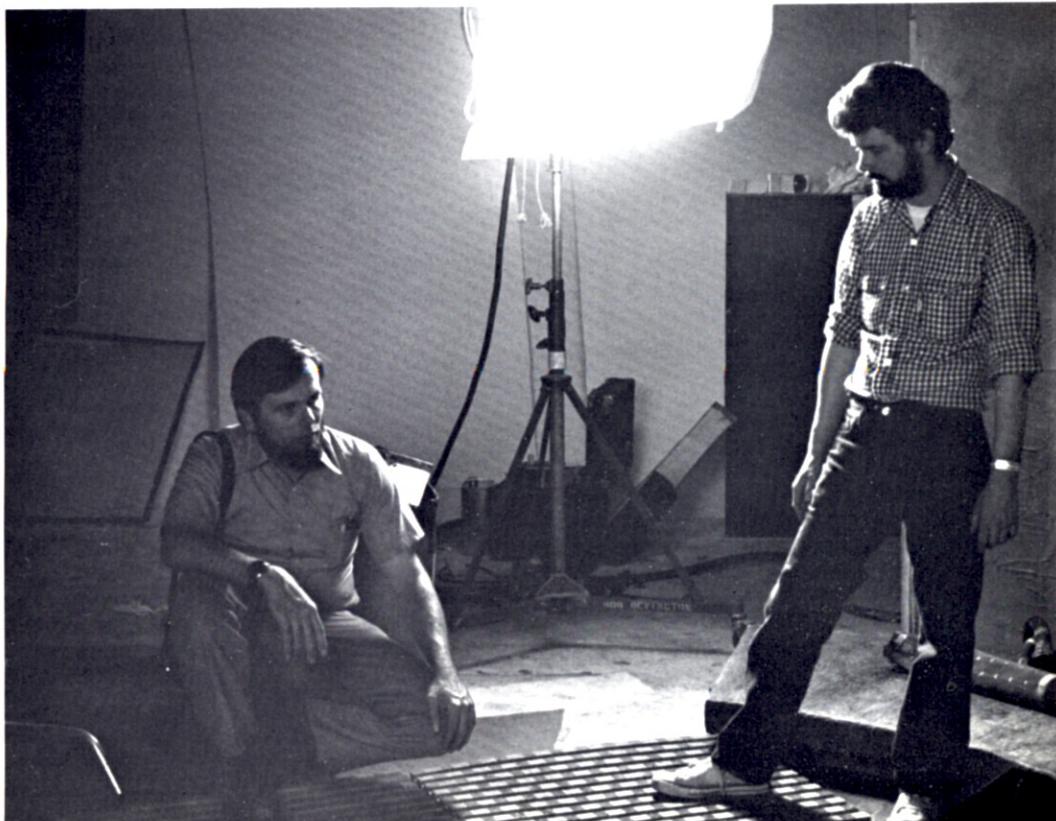
—Gary Kurtz

to use one of my old friends, like Spielberg, Coppola, or De Palma, but we'll see. I see that *Variety* reported the title as being *CHAPTER TWO: THE EMPIRE STRIKES BACK*, but that was more of an in joke, echoing the Flash Gordon serials. As I say though, I'm not making one unless the script is good and I'm approaching it from the premise that it's got to be as good or even better than the original.

*Have you any comments on the *STAR WARS* mania that is gripping the world?*

People in the science fiction community are worried that *STAR WARS* will take away from the serious side of the genre, and I think that is true for the general audience. Let's see if *CLOSE ENCOUNTERS OF THE THIRD KIND* will redress the balance? Harlan Ellison doesn't like the film because the fanaticism disturbs him and because people are going to see the movie not because they want to, but because it's the thing to do and it makes the audience seem like sheep. I got a letter the other day from graduates at Harvard which said that nobody was taken seriously unless they had seen *STAR WARS* at least six times!

My own view is that we need larger than life heroes. The children of today could possibly be the astronauts of tomorrow and if they are to have a sense of the pioneering spirit about them, isn't it better for them to have a sense of fantasy about a trip to the Moon or Mars than be told it's as dull as 2001 out there? Realism will not make anyone go out and find something for themselves.



Gary Kurtz (left) and George Lucas at ILM during the filming of inserts for the sequence set in the interior of the Jawa's junk-laden Sandcrawler. With his technical background in filmmaking, Kurtz was intimately involved in the filming of *STAR WARS*, providing support which freed Lucas to function creatively as director.

